AN EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF CHAMOMILE TEA ON INSOMNIA AND ANXIETY AMONG THE INSTITUTIONALIZED ELDERLY IN SELECTED OLD AGE HOMES, THANJAVUR.

BY

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A DISSERTATION SUBMITTED TO THE TAMILNADU DR.M.G.R.MEDICAL UNIVERSITY, CHENNAI-32 IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF THE DEGREE OF MASTER OF SCIENCE IN NURSING

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OCTOBER– 2016

DECLARATION

I hereby declare that this dissertation entitled "**An experimental study to assess the effectiveness Of Chamomile tea on Insomnia And Anxiety among Institutionalized elderly in selected old age homes,Thanjavur"** outcome of the original research work undertaken and carried out by me, under the guidance of research guide **Prof. Mrs.VANITHA INNOCENT RANI, M.Sc(N)., Ph.D.,** Professor cum Principal, and **Mrs.SARANYA, M.Sc(N),** Assistant Professor, Mental Health Nursing Department, Our Lady Of Health College Of Nursing, Thanjavur.

I hereby declare that the material of this has not found in any way, the basis for the award of any degree / diploma in this university or any other university.

301432102

CERTIFICATE

CERTIFIED THAT THIS IS THE BONAFIDE WORK OF

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"And said o man greatly beloved, fear not: peace be unto thee, be strong. And when He spoken unto me, I was strengthened, and said: let my Lord speak; for thou hast strengthened me"

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301432102

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ANNEXURES

LIST OF ABBREVIATIONS

SHORTFORMS	ABBREVIATIONS
H_1	Research Hypothesis
M.Sc. (N)	Master Of Science in Nursing
No	Number
N	Number of samples
F	Frequency
%	Percentage
SD	Standard deviation
χ^2	Chi-square
Fig	Figure
N.S	Not significant
**	Significant

ABSTRACT

Older adults with Insomnia and anxiety often go untreated for a number of reasons. The study focused on effectiveness of Chamomile Tea on Insomnia and Anxiety among Institutionalized elderly in selected old age homes, Thanjavur. True Experimental research design was used among 60 Institutionalized elderly by using simple random sampling technique. Semi Structured Insomnia Questionnaire and Standardized Zung Self-Rating Anxiety Scale were given to assess the levels of Insomnia and Anxiety. The statistical analysis revealed that in the experimental group for Insomnia the paired 't' test value ('t'=19.511) and for Anxiety ('t'=26.967), whereas in the control group for Insomnia ('t'=1.98) and for Anxiety ('t'= 0.926), hence the given intervention Chamomile Tea was effective. The comparison between the group of unpaired 't' test for Insomnia ('t'=6.613) and for Anxiety ('t'=9.125). this proved that there is a significant difference between experimental and control group at 0.05 level of significance. Whereas in correlation between the post test scores of Insomnia and Anxiety of the experimental group 'r' value (r=0.8) and control group 'r' value (r=0.4). For association by the Chi-square test there is a significant association in age, religion and individual monthly income of pre test levels of Insomnia and Education and Religion of pre test levels of Anxiety. Hence the given Chamomlie Tea was effective in experimental group.

CHAPTER – I

INTRODUCTION

CHAPTER I

INTRODUCTION

Cast all your anxiety on Him because He cares for you

(Holy Bible) -1 peter 5:7

BACKGROUND OF THE STUDY

Syam Prasad (2011) stated that changing age structure is one of structural change that witnessed in the last century. Population ageing is one of its consequences, which emerges as a global phenomenon in the present day. It is generally expressed as older individuals forming large share of the total population. This process is considered to be an end product of demographic transition or demographic achievements with a decline in both birth and mortality rates and consequent increase in the life expectancy at birth and older ages. The Indian aged population is currently the second largest in the world to that of china with 100 million of the aged. The absolute number of the over 60 population in India will increase from 77 million in 2011 to 137 million by 2021.

Linda (2005) mentioned that ageing is a journey or maturation or odyssey the process of ageing classically depicted as one of the constant and inexorable decline often reaching a peak of bodily function efficiency around the end of second decade of life. Moreover the later years of life are conventionally seen until very recently as one of withdrawal from the main stream of life due to infirmity.

Soneja (2002) revealed that in India it is reported that at present there are 77 million elderly persons and the number is expected to be 177 million in the next two decades.

Indian Health News (2007) mentioned that India is home to over to 76.6 million people over the age of 60. According to data available with the health ministry the country has 76,622,321 persons aged 60 and above. With nearly 14 percent of the elderly population Uttar Pradesh tops the chart with 11.6 million elderly. Maharashtra follows with 8.45 million senior citizens. West Bengal has 5.7 million, Bihar and Tamilnadu have 5.5 million senior citizens each. Delhi is home to 719,650 citizens above the age of 60. At the other end of the spectrum are places like Lakshadweep (3,729), Daman and Diu, Pondicherry and Dadra and Nagar Haveli with about 8,000 elderly each.

Seilesh, C.J (2008) illustrated that according to the **census 2001**, life expectancy of India has risen. According to it, India's total population was 1,02,87,37,436 which has 21.3 percent increase since 1991. Population of people falling under the age group of 60 years and above was 7,66,22,381 which was 7.5 percent of the total population, 'aged females' were 7.1 percent. The projected population of senior citizens of India in 2008 was 8,60,75,775. According to the **United National Child Fund** (UNICEF), life expectancy in India 1970 was 49, in 1990, it was 58 and in 2005, it was 64 years. According to the world life expectancy.com as on 2008, global life expectancy for some countries will be: India – 68.6, United States of America – 78, Australia – 80.6, South Africa – 42.5, China – 72.9, Russia – 65.9, Saudi Arabia – 75.9, United Kingdom – 78.8 and France – 80.6.

Kamal Nishanth (2009) stated that in the last decades 20th century expectancy has increased by 20 years to the present average of 66 years. During the same period, the ratio of the world population of citizens over 60 years of age has changed from 1 among 13 to 1 among 10. In Europe, the ratio is 1 among 5, the current global population of senior citizens is 580 million, around 60 percent, reside in the developing countries. By 2020, the world is expected to have around 1 billion senior citizens. In India, life expectancy of an

average citizen was just 23 years in 1901, which could only add 9 years till in 1951 to become 32 years. In 1981, the average national life expectancy reached 52 years, which went up to 62 years in 1996. By the year 2020, life expectancy of the country is poised to reach 70 years. At present, we have a population of around 77 million senior citizens.

Dr. Basarkar. S (2007) revealed that in India ¾ of geriatric population is young old and rest old old. In 1000 life expectancy was 18 years. In early 1900, the average life expectancy was around 47 years but will be around 85 years or more by 2010. The total number of elderly people globally anticipated to be doubled during 1996 – 2016 from 62.3 million to 11.29 million.

WHO (2004) stated that in India 3.8% of the population comprise people above 15 years of age. It is expected that by 2030 elderly population will form 21.8% of the total population.

According to Census report of Tamilnadu**,** in India the total number of population above 60 years of age group is 77 million. In Tamilnadu, the total number of population above the age group of 60 years is 55, 07,400. Among 32, 22,748 of senior citizens are living in rural area and 22, 84, 652 of senior citizens are living in urban area. 2, 87,089 of senior citizens are living in Erode district. According to National Centre for Health Statistics the majority of individuals age 65 or older live alone, with a spouse, or with relatives. At any time, fewer than 5% of people in this age group live in institution. This percentage increases dramatically with age, ranging from 1.1% for persons 65 to 74 years, to 4.3% for persons 75 to 84 years, and 18.3% for persons 85 and older.

There are 855 old age homes in India and 94 old age homes in Tamilnadu. The Madras institute of ageing survey also reported that the

numbers of elderly living in old age homes in India are 21,214 and 3,876 in Tamilnadu. The statement from Help age India. For many older people who don't have a roof over their heads or a place to call their own, Help age has provided support to 253 old age homes in India. A rising trend is being noticed among the urban elderly also, who move out of their homes and into habitats especially catering to their needs, in order to spend their later years in comfort.

Dr. Arvind K (2007) written an article on the travails of a greying nation mentioned that India is an example of a developing count, which lacks organized services for the elderly in the health, social or economic sectors. The health services available for the elderly in India are generally contained within the health services for the general population, without any special or specific initiatives for this group. It is estimated that 45% of the elderly have chronic disease and disabilities. One among this disease is stress. So specialized geriatric is necessary.

Syrjala K L (2013) stated that major reason for old age persons to join old age home is to meet basic needs (50%) and negligence rejection by family members (40%) based on the study conducted by the Department of Human Development and Family studies, Haryana agricultural University, Haryana. Psychological stress among them is high. So, Stress among the old age home residents is high.

National Institutes of Health (2012) mentioned that sleep is actually an active and organized process. Sleep is a physical and mental resting state in which a person becomes relatively inactive and unaware of the environment. In essence, sleep is a partial detachment from the world, where most external stimuli are blocked from the senses**.**

Lewis, Sharon. L (2013) illustrated that sleep is governed by a number of factors. Some of the factors are under our control, such factors help us to check our sleep level, and there are some factors beyond our control. Chief among these is our internal biologic clock that regulates our biologic rhythm (also called a circadian rhythm) over a 24-hour period. Sleep also has an internal organization regulated by different areas of the brain**.**

Hughes KA (2005) denoted that normal sleep physiology is divided into non–rapid eye movement (NREM) and rapid eye movement (REM) sleep. NREM sleep is further divided into progressively deeper stages of sleep: stage N1, stage N2, and stage N3 (deep or delta-wave sleep)[9]. As NREM stages progress, stronger stimuli are required to result in an awakening. Stage R sleep (REM sleep) has tonic and phasic components. Most dreaming takes place during REM sleep. As stated earlier, circadian rhythms also known as the biological clock determines the sleep. A cycle that lasts 24 hours is called circadian. The body's internal clock (circadian rhythms) plays an important role in regulating sleep/wake cycles. Circadian rhythms change over the lifespan, and older adults often find their sleep affected by these changes.

Srivastava RK (2013) believed that India now has the second largest aged population in the world. The small-family norm means that fewer working, younger individuals are called upon to care for an increasing number of economically unproductive, elderly persons.

The current prevalence for all types of anxiety disorder was found to be 17.1% overall and the lifetime prevalence was found to be 18.6%. The current prevalence rates for particular disorders were found to be 6.9% for generalized anxiety disorder (GAD). Anxiety disorders are more common among elderly people than was previously thought. The lifetime prevalence of specific phobia amongst the elderly is higher than that of general population.

The prevalence of specific anxiety disorders appears to vary between countries and cultures. A cross-national study of the prevalence of panic disorder found lifetime prevalence rates ranging from 0.4% in Taiwan to 2.9% in Italy. A cross-cultural study of the prevalence of OCD found lifetime prevalence rates ranging from 0.7% in Taiwan to 2.5% in Puerto Rico.

More than 16 million people in the United States aged 18-54 years suffer from an anxiety disorder. Prevalence rates of generalized anxiety disorder range from 2.9-4.6%.Worldwide prevalence rates of generalized anxiety disorder have been noted to be as high as 15%.

Epidemiological data of anxiety disorder in special population like elderly people. One population-based study on geriatric population was reported that nearly 9% of the subjects were diagnosed with ICD-9 (World Health Organization) anxiety neurosis. These data may contain unknown biases because over 42% of the geriatric population was assigned a psychiatric diagnosis; in contrast, less than 4% of non-geriatric subjects had an ICD-9 psychiatric diagnosis.

National Health Interview Survey shows that 39% of people over 65 years of age suffer from some limitation of activity due to chronic conditions and 11% are unable to carryout major activities because of their anxiety towards illness and also they suffer from some kind of anxiety disorders. The survey was conducted in Karnataka had shown that the incidence of anxiety related disease were alarmingly increasing among elderly due to separation from children’s, death of the spouse and physical changes. The survey has shown that 49% of elderly will have some form of anxiety disorders which will lead to the development of depressive disorders in future.

Older adults with anxiety disorders often go untreated for a number of reasons. Older adults often do not recognize or acknowledge their symptoms. When they do, they may be reluctant to discuss their feelings with their physicians. Some older adults may not seek treatment because they have suffered symptoms of anxiety for most of their lives and believe the feelings are normal. Both patients and physicians may miss a diagnosis of anxiety because of other medical conditions and prescription drug use, or particular situations that the patient is coping with. For example, the anxiety suffered by a recently widowed patient may be more than normal grieving. Complicated or chronic grief is often accompanied by persistent anxiety and grieving spouses may avoid reminders of the deceased.

National Sample Survey (2014) mentioned that according to the findings of the 60th NSSO Round, the proportion of aged persons who cannot move and are confined to their bed or home ranges from 77 per 1000 in urban areas to 84 per 1000 in rural areas Morbidity.

Mayne ST (2003) defined that the adult is over 65 years old, his or her sleep-wake cycle may not seem to work as well as it did when he or she was younger. As the age progresses, the body makes less of the chemicals and hormones that help us sleep well (growth hormone and melatonin).Older adults are more likely to report daytime sleepiness and to nap as compared to younger adults. Typically, the timing of sleep shifts to an earlier time (i.e., advances) from adulthood to old age. For some individuals, this change in the timing of sleep is benign; however, for others this change is problematic.

Robine JM (2014) revealed that if the sleep problems are not treated or if not taken any measures to alleviate these problems may to lead consequences. The consequences of untreated sleep problems may include significant emotional, behavioural, and cognitive dysfunction. The magnitude

of these sequel is inversely proportional to overall ability to adapt and develop in spite of the sleep disturbance.

Chamomile is one of the most ancient medicinal herbs known to mankind. It is a member of *Asteraceae*/*Compositae* family and represented by two common varieties *viz*. German Chamomile (*Chamomillarecutita*) and Roman Chamomile (*Chamaemelumnobile*). The dried flowers of chamomile contain many terpenoids and flavonoids contributing to its medicinal properties. Chamomile preparations are commonly used for many human ailments such as hay fever, inflammation, muscle spasms, menstrual disorders, insomnia, ulcers, wounds, gastrointestinal disorders, rheumatic pain, and haemorrhoids. Essential oils of chamomile are used extensively in cosmetics and aromatherapy. Many different preparations of chamomile have been developed, the most popular of which is in the form of herbal tea consumed more than one million cups per day. In this review we describe the use of chamomile in traditional medicine with regard to evaluating its curative and preventive properties, highlight recent findings for its development as a therapeutic agent promoting human health.

NEED FOR THE STUDY

Old age is viewed as an unavoidable, undesirable, problem-ridden phase of life that we all are compelled to live, marking time until our final exit from life itself. Perceiving old age with fear is actually a rather recent phenomenon. It seems to increase as each day passes and the world become more complex and less comprehensible.

WHO (2001) revealed that the world elderly population who are above 60 yrs and above is 600 million at present. In India, there are 77 million elderly persons. In Tamilnadu, there are 5.5 million senior citizens. In 600 million

world elderly population, 478 million are facing visual changes. In India, out of 77 million, 56 million are facing visual changes. In Tamilnadu, out of 5.5 million, 4.2 million are facing visual changes. so the majority of the old age population are facing visual changes according to the statistics given**.**

Leibig and Rajan (2013) stated that the Indian aged population is currently the second largest in the world after China (100 million). The absolute number of 60 and over in India will likely to increase from 77 million in 2001 to 137 million by 2021 (United Nations, 2003). The decadal growth rate among elderly population during 1991-2001 is about 40 percent – double than the general population growth of 21 percent. The percentage of elderly in India has increased from 5.4 percent in 1951 to 6.4 percent in 1981 and further to 7.4 in 2001. If the percentage of elderly population is above seven percent in any country, as per the UN criterion that country is ageing. In other words, India has emerged as "aging India" in the beginning of the 21st century. Thus twenty first century is the century of old **()**

Charan Singh (2005) conducted a study about the social problems of the aged rural population in India, the study reported 55 % of the old age people are being respected, 26 percentages was neglected, 46.8 % were happy and 53.4 % were unhappy. The study revealed that stress related problems such as depression are found commonly in the later group and the government should take initiation for further more studies in the area**.**

Anupam A, Sharma O.P (2009) stated that, In 1950 according to US estimates there were approximately 200 million aged (65 yrs) throughout the world .In 1975 their number had increased to 350 million .United Nations projections to the year 2000 indicates that the number will increase to 590 million and by the year 2025 to over 1100 million .That is a increase of 24

percentage since 1975. Currently as per WHO estimates there are about 580 million older people in the world.

Hunter RI (2009) conducted a study in old age homes in the care of the elderly in Gujarat projected the results suggest that while the physical ties of the elderly man and women, with their adult children home weekend or snapped completely psychological and emotional bond with them remains strong. That produces stress and depression among them.

Kulkarni B R, Ranjan D (2009) conducted a study to assess that level of mental health among the residents in an old age home at Calcutta, India. Out of total of 60 residents, 26.6% had very poor mental health level and majority 48.3% had a poor level of mental health. The same study revealed the main psychological problem among old age home residents. Frustration was experienced by 67.2%, feeling of insecurity was experienced by 76.4% and loneliness by 54%. The majority76.6% of the subjects were females and the commonest reason for 40% of them joining in the old age home was "not to be a burden of family members.

Deena N, Kakoti (2013) conducted a study in rural and urban areas of Vellore regarding dependent, independent and related health needs and problems of the elderly on 200 respondents. This study revealed that 78.5% were depressed due to loneliness and poverty.

Charles A W, Linda B C (2011) conducted a study on a sample of 15 subjects from 5 old age homes. Their reasons for joining old age home were as follows: 28.3% inmates took their own decisions to get admitted, whereas for others family members took decision. Family disharmony was the commonest reason for 64.2% of them. No dependents for 62.9% of them. Inadequate accommodation to stay for 66.7% of them. Clinical examination shows that,

67.2% were frustrated and 76.7% felt in secured. Charles A Walker and Linda Box Curry identified that “Relocation stress syndrome” is a nursing diagnosis characterized by symptoms such as anxiety, confusion, fear, helplessness, indecisiveness, suicidal thoughts and suspicion, hopelessness and loneliness. It usually occurs in older adults shortly after moving from a private residence to nursing home or assisted living facility. Eight nursing home residents and 8 assisted living facility residents were interviewed 2 to 4 weeks after admission, when symptoms of relocation stress syndrome are most likely to appear. This study indicated that the relocation stress syndrome may be overestimated.

Smith J C, Sodergren K M (2009) conducted a study to determine that multiple losses rendered to the elderly vulnerable to loneliness and that the ensuring loneliness adversely affects the cognitive status of the elderly loss of people, places and things that gave meaning to life and represent accomplishments and pride result in a loss of self esteem and a diminished sense of value of others. Anxiety is common in old age and is frequently caused by the loss of self-esteem and the ability to adapt.

Rochester, MN (2005) stated that Six to eight hours per day is the average amount of sleep a person needs. That's about one-third of a lifetime! As a population, we sleep about 1 to 1.5 hours less than we did 100 years ago.

Srivastava RK (2005) provided a statistical data showed that 40-60% of all elderly adults have insomnia in the course of year. 2 out of 3 older people have insomnia at some point in their lives. Over 70 million Americans suffer from disorders of sleep and wakefulness. Of those, 60% have a chronic disorder. Women are twice as likely as men to have difficulty falling and staying asleep. Over half of those over the age of 65 experience disturbed sleep. Those over 65 make up about 13% of the US population, but consume over 30% of prescription drug and 40% of sleeping pills[14]. The American

Academy of Family Physicians (1999) reports over 50 percent of people 65 years old and older live with the effects of sleep disorders, such as sleep deprivation symptoms, sleep apnea and periodic limb movement disorder.

As of 2006, persons 65 years of age or older comprise approximately 12% of the United States population, but by 2030 the proportion of older adults will rise to 20%.This older portion of the national population is increasing twice as fast as other age groups, so that by 2030 the number of persons 65 year of age or older in the United States will effectively double to 72 million. In this rapidly expanding older portion of the national population, one of the major changes that commonly accompany the aging process is an often profound disruption of an individual's daily sleep-wake cycle.

Kripke DF, Garfinkel L, Wingard DL, et al, (2012) mentioned that according to ICMR survey(India) as many as 69% of older individuals complain about sleep problems such as disturbed or light sleep, frequent awakenings, early morning awakenings, and undesired daytime sleepiness. Such disturbances can lead to impaired daytime function and seriously compromise quality of life. Age alone does not cause sleep problems. Disturbed sleep, waking up tired every day, and other symptoms of insomnia are not a normal part of aging[17]. Instead, poor sleep habits, untreated sleep disorders, medications, or medical problems can contribute to sleeplessness.

Kripke DF, Garfinkel L, Wingard DL, et al, (2012) stated that the possible effects of sleep deprivation include depression, heart disease, hypertension, irritability, slower reaction times, sleep and health in the elderly. With the increase of people's age, the likelihood of sleep disorders increases. In older adults, sleep disorders can lead to serious health consequences.

Lankford DA, Corser BC, ZhengYP et al, (2008) revealed that in the year 2009, there were an estimated 605 million elderly adults in the world, of which 400 million are living in low-income countries. By 2025, the number of elderly adults is expected to raise more than 1.2 billion with about 840 million of them in low income countries. For the year 2003 the SRS estimates are 7.2% of total population were above the age of 60 years.

Walsh JK, Salkeld L (2009) illustrated that according to VAHI, report of the Independent commission on Health in India conducted a study in 2004 revealed that the prevalence of sleep disorder and sleep quality among old age group constitutes one of the most common difficulties faced by older adults with 58% reporting sleeping difficulties at least a few nights per week. However, sleep problems remain untreated in up to 85% of people, and, among those who receive treatment and sedative-hypnotic medications remain the treatment of choice**.**

The government of India of health survey and development committee reported that such pharmacologic management may have particularly deleterious effects in older adults, including daytime confusion, drowsiness, falls and fractures, and adverse interactions with other medications. The National Sleep Foundation poll of older adults found a close relationship between the health and quality of life of older adults, and their sleep quantity and quality. “The NSF poll found that the better the health of older adults, the more likely they are to sleep well. Conversely, the greater the number of diagnosed medical conditions, the more likely they are to report sleep problems. Additionally, among older adults, more positive moods and outlooks as well as having more active and "engaged" lifestyles are associated with sleeping 7–9 hours and fewer sleep complaints.”

Walsh JK (2007) Many older adults are interested to know the measures for undisturbed sleep. There are number of measures in aiding and promoting sleep. One of them is deep breathing exercises. Other measures either need to be performed under supervision or need in depth knowledge about the mechanism and underlying physiology behind it.

In the present study, we investigated hypnotic activities of chamomile and passiflora extracts using sleep-disturbed model rats. A significant decrease in sleep latency was observed with chamomile extract at a dose of 300 mg/kg, while passiflora extract showed no effects on sleep latency even at a dose of 3000 mg/kg. No significant effects were observed with both herbal extracts on total times of wakefulness, non-rapid eye movement (non-REM) sleep and REM sleep. Flumazenil, a benzodiazepine receptor antagonist, at a dose of 3 mg/kg showed a significant antagonistic effect on the shortening in sleep latency induced by chamomile extract. No significant effects were observed with chamomile and passiflora extracts on delta activity during non-REM sleep. In conclusion, chamomile extract is a herb having benzodiazepine-like hypnotic activity

World-wide use of herbal medicines is increasing, following regulatory and manufacturing developments. Herbs are attractive alternative medications to many patients with sleep disorders, who may be averse to using conventional drugs. We review here the most common herbal stimulants and sedatives. Caffeine, in herbal teas, black tea, coffee, soft drinks and pharmaceuticals, is used widely to control sleepiness, but more research is needed on its use in sleep disorders. Ephedra, and its constituent ephedrine, are used in both stimulant and weight loss preparations, sometimes with caffeine; safety concerns have arisen with this practice. Yohimbe is another herb used in stimulant and body-building preparations which has safety concerns. Asian and Siberian ginseng have been traditionally used for fatigue, and have some

supportive experimental evidence for this use. Herbal sedatives also have some evidence for efficacy; the observations that certain plant flavonoid compounds bind to benzodiazepine receptors adds interest to their use. Valerian and kava have received the most research attention; both have decreased sleep onset time and promoted deeper sleep in small studies, and kava also shows anxiolytic effects. German chamomile, lavender, hops, lemon balm and passionflower are reputed to be mild sedatives but need much more experimental examination.

The researcher personally experienced that the old age populations residing in homes are living with lot of stress, having lot of stress induced physical and emotional problems. The researcher got an idea to do intervention for reducing the stress of these people. The literature gives many interventions like healing touch, guided imagery, laughter therapy and progressive muscle relaxation.

The researcher interested in examining the effect of mindfulness meditation for caring elderly people with stress. This study evaluates the effectiveness of mindfulness meditation on stress and quality of sleep among elderly people.

STATEMENT OF THE PROBLEM

An experimental study to assess the effectiveness of chamomile tea on insomnia and anxiety among the institutionalized elderly in selected old age homes, Thanjavur

OBJECTIVES

1. To assess the pre test and post test level of insomnia and anxiety among the institutionalized elderly in experimental and control group.

2. To determine the effectiveness of chamomile tea on insomnia and anxiety among the institutionalized elderly in experimental group.
3. To compare the post test level of insomnia and anxiety between the experimental and control group among the institutionalized elderly.
4. To correlate the Post test level of insomnia and anxiety among the institutionalized elderly in experimental and control group.
5. To associate the pre test level of insomnia and anxiety with the selected demographic variables among the institutionalized elderly in experimental and control group.

HYPOTHESES:

All the hypotheses will be tested at 0.05 level of significance.

- H_1- There will be a significant difference between the pre and post test level of insomnia and anxiety in the experimental and control group among the institutionalized elderly.
- H_2- There will be a significant difference in the level of insomnia and anxiety between the experimental and control group among the institutionalized elderly.
- H_3- There will be a significant relationship between the post test level of insomnia and anxiety among the institutionalized elderly in experimental and control group.
- H_4- There will be a significant association between the pre test level of insomnia and anxiety and the selected demographic variables in experimental and control group among the institutionalized elderly.

OPERATIONAL DEFINITIONS

Effectiveness

In this study, it refers to the promotion of sleep and reduction of anxiety among the institutionalized elderly.

Chamomile Tea

In this study, it refers to the extract which is prepared by adding 2gm of commercially available dried powder of chamomile with 100ml of water after boiling and administered one hour before going to bed at night.

Insomnia

In this study, it refers to the sleep disturbances of the institutionalized elderly which will be measured by semi-structured insomnia questionnaire.

Anxiety

In this study it refers to the unpleasant feeling of the elderly which will be measured by Standardized Zung Self-Rating anxiety Scale.

Institutionalized Elderly

In this study, it refers to the old age people 60 and above residing at the old age home.

Old Age Home

In this study it refers to the place where the elderly are residing.

ASSUMPTIONS

- The institutionalized elderly may have increased sleep disturbances and anxiety
- The chamomile tea may help the institutionalized elderly to enhance sleep and ease anxiety.

DELIMITATIONS

- The study was limited to the institutionalized elderly in selected old age homes, Thanjavur.
- The data collection period was limited to 6 weeks.

PROJECTED OUTCOME

- The study helps to enhance the sleep and ease the anxiety of institutionalized elderly.
- The study helps the institutionalized elderly to improve their usage of Chamomile tea and its practice in future.

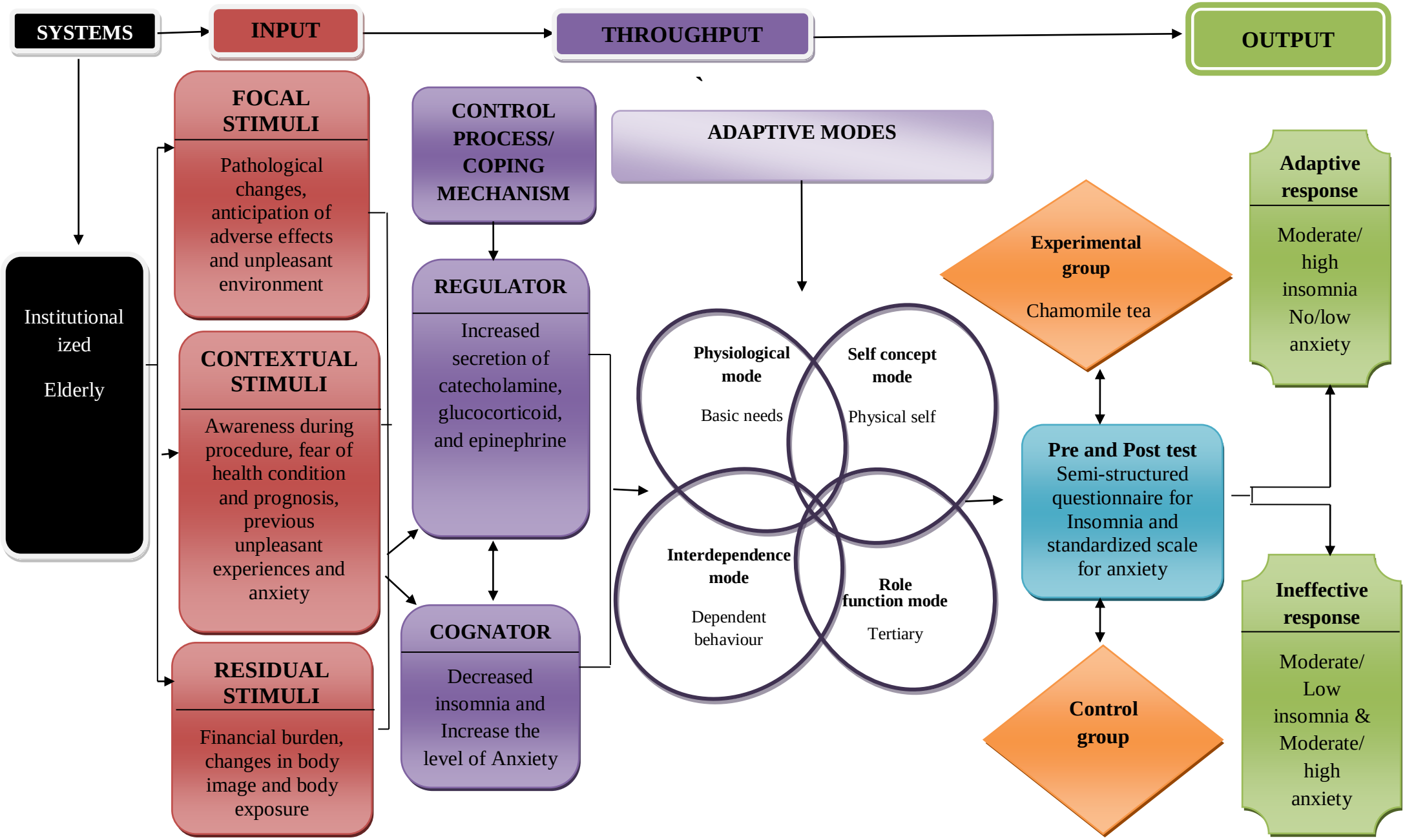


Fig.2.1: CONCEPTUAL FRAMEWORK BASED ON SISTER CALLISTA ROY'S ADAPTATION MODEL-(1991)

CHAPTER – II

REVIEW OF LITERATURE

CHAPTER II

REVIEW OF LITERATURE

The review of literature is a broad comprehensive in depth, systematic and literature review of scholarly publication, unpublished scholarly print materials, audiovisual materials and personal communication.

The review of literature of the present study has been organized under the following headings

PART I

a) Studies related to anxiety among old age
b) Studies related to insomnia among old age
c) Studies related to effectiveness of chamomile tea

PART II

Conceptual Framework

PART I:

a) STUDIES RELATED TO ANXIETY AMONG OLD AGE

Williams MW, Kueider AM et al., International Journal of Geriatric Psychiatry (2016) revealed that the DIF was present for anxiety symptoms but not for depressive symptoms, such that higher anxiety placed older adults at a disadvantage on measures of memory performance. Analysis of DIF impact showed that compared with participants

scoring in the bottom quartile of anxious symptoms, participants in the upper quartile exhibited memory performance scores that were 0.26 standard deviation lower. Anxious but not depressive symptoms introduce test bias into the measurement of memory in older adults. This indicates that memory models for research and clinical purposes should account for the direct relationship between anxiety symptoms and memory tests in addition to the true relationship between anxiety symptoms and memory construct. These findings support routine assessments of anxiety symptoms among older adults in settings in which cognitive testing is being conducted.

Hunot V, Churchill R, et al., Cochrane Database of Systematic Reviews (2015) conducted a study on Psychological therapies for generalized anxiety disorder. Twenty five studies (1305 participants) were included in the review, of which 22 studies (1060 participants) contributed data to meta-analyses. Based on thirteen studies, psychological therapies, all using a CBT approach, were more effective than TAU/WL in achieving clinical response at post-treatment (RR 0.64, 95%CI 0.55 to 0.74), and also in reducing anxiety, worry and depression symptoms. No studies conducted longer-term assessments of CBT against TAU/WL. Six studies compared CBT against supportive therapy (non-directive therapy and attention-placebo conditions). No significant difference in clinical response was indicated between CBT and supportive therapy at post-treatment (RR 0.86, 95%CI 0.70 to 1.06), however, significant heterogeneity was indicated, which was partly explained by the number of therapy sessions. The conclusion was Psychological therapy based on CBT principles is effective in reducing anxiety symptoms for short-term treatment of GAD. The body of evidence comparing CBT with other psychological therapies is small and heterogeneous, which precludes drawing conclusions about which psychological therapy is more effective. Further

studies examining non-CBT models are required to inform health care policy on the most appropriate forms of psychological therapy in treating GAD.

International Journal of Geriatric Psychiatry (2015) conducted a study on anxiety among elderly and found that more than 27% of older adults under the care of an aging service provider have symptoms of anxiety that may not amount to diagnosis of a disorder, but significantly impact their functioning. Excessive anxiety that causes distress or that interferes with daily activities is not a normal part of aging, and can lead to a variety of health problems and decreased functioning in everyday life. Between 3% and 14% of older adults meet the criteria for a diagnosable anxiety disorder.

Samantha Barton, Charlotta Karner et al., National Institute of Health Research Journal (2014) conducted a systematic review of the clinical effectiveness of treatments for treatment-resistant anxiety in older adults was carried out. Specific studies evaluating interventions in older adults with an anxiety disorder who have not responded to first-line treatment are needed to address the lack of evidence. The lack of evidence in this area means that older adults are perhaps receiving inappropriate treatment or are not receiving a particular treatment because there is limited evidence to support its use. At this time there is scope to develop guidance on service provision and, as a consequence, to advance the standard of care received by older adults with a treatment-resistant anxiety disorder in primary and secondary care. Evaluation of the relative clinical effectiveness and acceptability of pharmacological and psychological treatment in older adults with an anxiety disorder that has not responded to first-line treatment is key future research to inform decision-making of clinicians and patients. An important consideration would be the enrolment of older adults who would be representative of older adults in

general, i.e. those with multiple comorbid physical and mental disorders who might require poly pharmacy.

The British Psychological Society & The Royal College of Psychiatrists (2011) stated that around 4.4% of adults in England are affected by generalised anxiety disorder. It can become chronic if it is not treated, often co-occurs with other anxiety and depressive disorders and is associated with substantial disability. This guideline is an indispensable tool in enabling healthcare professionals to identify generalised anxiety disorder and provide the most effective treatments in a stepped-care framework.

Michael B. Friedman, Lisa Furst et al., Aging Well (2010) conducted a study on identifying and treating anxiety disorders and revealed that the anxiety disorders are the most prevalent mental illnesses. In any given year, about 10% of adults aged 65 and older have a diagnosable anxiety disorder. Over their lifetimes, about 15% of those who survive past the age of 65 will have had an anxiety disorder. Until recently, research on anxiety disorders among older adults was limited by a lack of information because many of these disorders have gone undetected and untreated. However, the pace of research has been accelerating, and there are some effective interventions now available.

Wolitzky-Taylor, K. B. Castriotta, N et al., Depression and Anxiety (2010) revealed about Anxiety disorders in older adults: A comprehensive review. Older adults with anxiety disorders experience more difficulties managing their day-to-day lives than older adults with normal worries, and they are at greater risk of physical illness, falls, depression, disability, premature mortality, social isolation, and placement in institutions.

Gellis., Social Work Desk Reference (2009) The prevalence of anxiety disorders increases among older adults who have physical illnesses, particularly those in need of home health care or who live in residential care settings such as nursing homes, assisted-living facilities, or homes for the aged.

Jessica Calleo, Melinda A. Stanley., Psychiatric Times (2008) stated that anxiety disorders occur in about 4% to 10% of community samples of older adults, and anxiety symptoms that do not meet criteria for a disorder affect 15% to 20%. Generalized anxiety disorder (GAD), characterized by persistent worry and associated physical symptoms lasting 6 months or longer, is the most common of the pervasive anxiety disorders in later life. Its community prevalence (in all age groups) is estimated to be 4% to 7% and 3% to 11% in older patients in the primary care setting. These figures may be significant underestimates, given that many older adults deny psychological problems and emphasize somatic complaints.

Eric J. Lenze., University of Pittsburgh School of Medicine (2006) stated that studies have shown that generalized anxiety disorder is more common in the elderly, affecting 7% of seniors, than depression, which affects about 3% of seniors. Surprisingly, there is little research that has been done on this disorder in the elderly University of Pittsburgh School of Medicine, in a news release.

b) STUDIES RELATED TO INSOMNIA AMONG OLD AGE

Michelle Brasure, Roderick MacDonald, et al., Agency for Healthcare Research and Quality (US) (2015) conducted a study to assess the efficacy, comparative effectiveness, and harms

of treatments for insomnia disorder in the general adult population and older adults. We searched bibliographic databases through January 2015 for studies evaluating psychological, pharmacologic, and complementary and alternative medicine interventions for insomnia disorder. We synthesized evidence from 181 unique studies and 12 observational studies. Sample sizes and enrollment criteria varied; most trials were short in duration. Outcome reporting and intervention effect sizes varied, and a large placebo response was often observed. Cognitive behavioral therapy for insomnia (CBT-I) improved global outcomes and nearly all sleep parameters in the general adult population, older adults, and adults with pain. We found insufficient evidence on adverse effects of these interventions. It was concluded CBT-I or medical therapy with eszopiclone, zolpidem, and suvorexant improve global and sleep outcomes for insomnia disorder. Clinical significance, applicability, comparative effectiveness, and long-term efficacy, especially among older adults, are less well known. Effect sizes vary, and a large placebo response is sometimes observed. Observational studies suggest an association of hypnotics with infrequent but serious harms. FDA labels provide specific warnings and precautions for drugs approved for insomnia.

Chen HC, Su TP et al., Sleep (2013) conducted a nine-year follow-up study of sleep patterns and mortality in community-dwelling older adults in Taiwan. A total of 4,064 participants over the age of 65 completed the study. Insomnia was classified using an exclusionary hierarchical algorithm, which categorized insomnia as "no insomnia," "subjective poor sleep quality," "Pittsburgh Sleep Quality Index > 5 insomnia," "1-month insomnia disorder," and "6-month insomnia disorder." The main outcome variables were 9-year all-cause mortality rates. In the all-cause mortality analyses, when hypnotic use, depressive symptoms and total sleep time were excluded from a proportional hazards regression model, subjects with "Pittsburgh Sleep Quality Index > 5 insomnia" had a higher mortality risk (HR: 1.21, 95% CI: 1.01-1.45). In the full

model, frequent hypnotic use and long sleep duration predicted higher mortality rates. However, the increased mortality risk for subjects with “Pittsburgh Sleep Quality Index > 5 insomnia” was not observed in the full model. On the contrary, individuals with a 6-month DSM-IV insomnia disorder had a lower risk for premature death (HR: 0.64, 95% CI: 0.43-0.96). Long sleep duration and frequent hypnotics use predicted an increased mortality risk within a community-dwelling sample of older adults. The association between insomnia and mortality was affected by insomnia definition and other parameters related to sleep patterns.

Gülseren Dağlar, Selma Sabancıoğulları et al., Australian Journal of Advanced Nursing (2013) conducted a study on sleep quality in the elderly either living at home or in a nursing home. There was no statistically significant difference between mean scores and sleep qualities of both groups ($p > 0.05$). The sleep quality of the individuals in both groups was not significantly influenced by personal variables such as age, gender, education, income, having children, and having a physical illness ($p > 0.05$). Individuals in both groups who reported their sleep as inadequate had sleep problems, and those who reported their sleep was affected for various reasons and who perceived their health as poor had significantly worse sleep quality ($p < 0.05$). The sleep quality of the elderly living either at home or in a nursing home were at similar levels and more than half of individuals in both groups had poor sleep quality.

Hatice Tel, Neurology, Psychiatry and Brain research (2013) conducted a study with the sample consisted of 187 elderly people. Data were collected with a personal information form, Pittsburgh Sleep Quality Index and Turkish Version of WHOQOL-BREF-quality of life scale. It was found out that sleep quality of the elderly people was poor. It was noted that there was a close correlation between age and sleep quality and quality of life of the elderly

people, and sleep quality and quality of life decreased as the age of the elderly people increased. It was explored that there was a significant difference between gender, marital status, educational status, the person with whom the elderly people lived, presence of a physical disease, diagnosis of a disease and sleep quality and quality of life ($p < 0.05$). The elderly people have a low sleep quality and there is a close relationship between sleep quality and the quality of life. The quality of sleep should be continued by ensuring sleep hygiene among the elderly people and thus the quality of life should be increased.

Jianfeng Luo, Guoxing Zhu, et al., Journal of Plos One (2013) conducted a study on prevalence and risk factors of poor sleep quality among elderly. Sleep disorders causes a significant negative effect on mental and physical health, particularly among the elderly. The disease burden and risk factors of poor sleep quality of the elderly need to be verified using a validated form of measurement in urban mainland China. The prevalence of poor sleep quality in this population was 41.5% (95% confidence interval (CI)=38.6–44.5%), with a higher rate observed in elderly females (45.8% [95% CI=41.9–49.7%]) than that in elderly males (35.8% [95% CI=31.4–40.1%]). The prevalence rate increased with age, from 32.1% (95% CI=27.8–36.4%) in those aged 60–69 years to 52.5% (95% CI=45.9–59.1%) in those aged ≥80 years (p value for trend<0.001). Multivariate logistic regression analysis indicated that age (OR=1.03[95% CI=1.01–1.05], p<0.001), less education duration (OR=1.04 [95% CI=1.01–1.08, p=0.014), living alone (OR=1.62 [95% CI=1.02–2.58], p=0.04), anxiety (ZSAS score: OR=1.09 [95% CI=1.05–1.12], p<0.001), number of chronic disease (OR=1.18 [95% CI=1.07–1.30], p=0.14) and arthritis (OR=1.45[95% CI=1.05–2.01], p=0.025) were risk factors of poor sleep quality. Poor sleep quality is highly prevalent among elderly Chinese residents in urban Shanghai. Growing

attention and comprehensive countermeasures involving psycho-social and personal activities might alleviate the sleep problem in the elderly.

Yang PY, Ho KH, Chen HC, et al., Journal of Physiotherapy (2012) conducted a study on Exercise training improves sleep quality in middle-aged and older adults with sleep problems: a systematic review. Six trials were eligible for inclusion and provided data on 305 participants (241 female). Each of the studies examined an exercise training program that consisted of either moderate intensity aerobic exercise or high intensity resistance exercise. The duration of most of the training programs was between 10 and 16 weeks. All of the studies used the self-reported Pittsburgh Sleep Quality Index to assess sleep quality. Compared to the control group, the participants who were randomized to an exercise program had a better global Pittsburgh Sleep Quality Index score, with a standardized mean difference (SMD) of 0.47 (95% CI 0.08 to 0.86). The exercise group also had significantly reduced sleep latency (SMD 0.58, 95% CI 0.08 to 1.08), and medication use (SMD 0.44, 95% CI 0.14 to 0.74). However, the groups did not differ significantly in sleep duration, sleep efficiency, sleep disturbance, or daytime functioning. Participation in an exercise training program has moderately positive effects on sleep quality in middle-aged and older adults. Physical exercise could be an alternative or complementary approach to existing therapies for sleep problems.

Dijk DJ; Groeger JA, et al., *SLEEP* (2010) conducted a study on age-related reduction in daytime sleep propensity and nocturnal slow wave sleep. During baseline sleep, SWS decreased ($P < 0.001$) and the number of awakenings increased ($P < 0.001$) across the 3 age groups. During the baseline day, MSLT values increased across the three age groups ($P < 0.0001$) with mean values of 8.7min (SD: 4.5), 11.7 (5.1) and 14.2 (4.1) in the young, middle-aged, and older adults, respectively. KSS values were 3.7 (1.0), 3.2 (0.9), and 3.4 (0.6) (age-group: $P = 0.031$). Two nights of SWS disruption led to

a reduction in MSLT and increase in KSS in all 3 age groups (SWS disruption vs. control: $P < 0.05$ in all cases).Healthy aging is associated with a reduction in daytime sleep propensity, sleep continuity, and SWS. In contrast, experimental disruption of SWS leads to an increase in daytime sleep propensity. The age-related decline in SWS and reduction in daytime sleep propensity may reflect a lessening in homeostatic sleep requirement. Healthy older adults without sleep disorders can expect to be less sleepy during the daytime than young adults.

Montgomery P, Dennis JA., Cochrane Database of Systematic Reviews (2009) stated that the prevalence of sleep problems in adulthood increases with age. While not all sleep changes are pathological in later life, severe disturbances may lead to depression, cognitive impairments, deterioration of quality of life, significant stresses for carers and increased healthcare costs. The most common treatment for sleep disorders (particularly insomnia) is pharmacological. The efficacy of non-drug interventions has been suggested to be slower than pharmacological methods. Six trials, including 282 participants with insomnia, examined the effectiveness of cognitive-behavioural treatments (CBT) for sleep problems in this population. The final total of participants included in the meta-analysis was 224. The data suggest a mild effect of CBT for sleep problems in older adults, best demonstrated for sleep maintenance insomnia. The conclusion was when the possible side-effects of standard treatment (hypnotics) are considered, there is an argument to be made for clinical use of cognitive-behavioural treatments. Research is needed to establish the likely predictors of success with such treatments. As it may well be the case that the treatment efficacy of cognitive-behavioural therapy itself is not durable, the provision of "top-up" ("refresher" sessions of CBT training to improve durability of effect are worthy of investigation.

W. Vaughn McCall, Primary Care Companion Journal of psychiatry (2004). The goal of insomnia treatment in the elderly is to improve sleep onset and maintenance, ideally with next-day benefits rather than residual effects, with attention to the risk of drug-drug interactions and safety profiles. Currently, commonly used available agents are associated with advantages and limitations, and much work needs to be done in order to understand the problems of elderly insomnia and the utility of various agents for insomnia in this population. Efficacy for sleep maintenance should be considered, along with safety and next-day performance effects. Clinical pharmacotherapy guidelines for geriatric patients recommend using the lowest effective dose, agents with shorter elimination half-lives, short-term treatment (3–4 weeks), gradual discontinuation, and monitoring for rebound insomnia.

David N. Neubauer., American Family Physician (1999) Complaints of sleep difficulty are common among the elderly. In a National Institute on Aging study of over 9,000 persons aged 65 years and older, over one half of the men and women reported at least one chronic sleep complaint. Typical symptoms of sleep problems in the elderly include difficulty falling asleep and maintaining sleep, early-morning awakening and excessive daytime sleepiness. The consequences of chronic sleep problems can be considerable. Loss of sleep or chronic use of sedating medications may lead to falls and accidents. Sleep-disordered breathing may have serious cardiovascular, pulmonary and central nervous system effects. Evidence supports a strong association between sleep apnea and hypertension. In persons with dementia, severe sleep disruption often leads to nursing home placement. For all of these reasons, sleep problems in elderly patients should be properly evaluated and treated.

c) STUDIES RELATED TO EFFECTIVENESS OF CHAMOMILE TEA

Jay D Amsterdam, Justine Shults et al., Alternative Therapy Health Medicine (2012) conducted an exploratory study Chamomile (Matricaria recutita) may provide antidepressant activity in anxious, depressed humans. In the current study, the research team observed a significantly greater reduction over time in total HAM-D scores for chamomile vs placebo in all participants (P<.05). The team also observed a clinically meaningful but non significant trend for a greater reduction in total HAM-D scores for chamomile vs placebo in participants with current comorbid depression (P = .062). When the team examined the HAM-D core mood item scores, it observed a significantly greater reduction over time for chamomile vs placebo in all participants (P<.05) and a clinically meaningful but non significant trend for a greater reduction over time for chamomile vs placebo in participants without current or past depression (P = .06). Chamomile may provide clinically meaningful antidepressant activity that occurs in addition to its previously observed anxiolytic activity.

University of Pennsylvania., Alternative Therapies in Health and Medicine (2012) conducted a double-blind, placebo-controlled clinical study in that people diagnosed with mild to moderate anxiety and depression were given 220 mgs of chamomile extract daily for 8 weeks. Utilizing both the Beck Anxiety Inventory System and the Hamilton Anxiety Rating, researchers found that 57 percent of the group using the chamomile had a significant reduction in their symptoms.

Janmejai K Srivastava, Eswar Shankar et al., Molecular medicine report (2011) conducted a study on Chamomile: the past herbal with a bright

future. Chamomile is one of the most ancient medicinal herbs known to mankind. It is a member of*Asteraceae*/*Compositae* family and represented by two common varieties *viz.* German Chamomile (*Chamomilla recutita*) and Roman Chamomile (*Chamaemelum nobile*). The dried flowers of chamomile contain many terpenoids and flavonoids contributing to its medicinal properties. Chamomile preparations are commonly used for many human ailments such as hay fever, inflammation, muscle spasms, menstrual disorders, insomnia, ulcers, wounds, gastrointestinal disorders, rheumatic pain, and hemorrhoids. Essential oils of chamomile are used extensively in cosmetics and aromatherapy. Many different preparations of chamomile have been developed, the most popular of which is in the form of herbal tea consumed more than one million cups per day. In this review we describe the use of chamomile in traditional medicine with regard to evaluating its curative and preventive properties, highlight recent findings for its development as a therapeutic agent promoting human health.

Sánchez-Ortuño MM et al., (2011), stated that the use of natural products as sleep aids is a common practice. Often associated with a general health-promoting lifestyle, it may reflect the common perception that natural products are necessarily beneficial for sleep and without risks. A randomly selected sample of adults (n=997; 59.9% women) from the province of Quebec completed a postal survey on sleep, use ofsleep-promoting products (natural products, prescribed medication, over-the-counter medication and alcohol), physical and mental health, lifestyle habits and demographics. A total of 18.5% of participants reported having used natural products as sleep aids in the past 12months, with chamomile being the most popular product. Participants who exclusively used natural products as sleep aids (10.3% of the sample) were predominantly females, younger and had a higher educational level than those using prescribed medications. Natural products users reported engaging in more health-promoting behaviors than the nonusers of sleep aids and, despite the

presence of sub-threshold insomnia symptoms (mean Insomnia Severity Index score=9.33), they tended to perceive themselves as healthier when compared with prescribed medication users and nonusers of sleep aids.

Amsterdam JD, Shults J et al., University of Pennsylvania School of Medicine: Philadelphia (2009), stated in the current study, the research team observed a significantly greater reduction over time in total HAM-D scores for chamomile vs placebo in all participants ($P < .05$). The team also observed a clinically meaningful but nonsignificant trend for a greater reduction in total HAM-D scores for chamomile vs placebo in participants with current co-morbid depression ($P = .062$). When the team examined the HAM-D core mood item scores, it observed a significantly greater reduction over time for chamomile vs placebo in all participants ($P < .05$) and a clinically meaningful but nonsignificant trend for a greater reduction over time for chamomile vs placebo in participants without current or past depression ($P = .06$). Chamomile may provide clinically meaningful antidepressant activity that occurs in addition to its previously observed anxiolytic activity.

Amsterdam JD, Li Y, et al., journal of clinical psychopharmacology, (2009) illustrated that we observed a significantly greater reduction in mean total HAM-A score during chamomile versus placebo therapy ($P = 0.047$). Although the study was not powered to identify small to moderate differences in secondary outcomes, we observed a positive change in all secondary outcomes in the same direction as the primary outcome measure. One patient in each treatment group discontinued therapy for adverse events. The proportion of patients experiencing 0, 1, 2, or 3 adverse events or more was not significantly different between groups ($P = 0.417$). This is the first controlled clinical trial of chamomile extract for GAD. The results suggest that chamomile may have modest anxiolytic activity in patients with mild to moderate GAD. Future studies are needed to replicate these observations.

Shinomiya K, Inoue T et al., Biological and Pharmaceutical Bulletin (2005) stated that in the present study, we investigated hypnotic activities of chamomile and passiflora extracts using sleep-disturbed model rats. A significant decrease in sleep latency was observed with chamomile extract at a dose of 300 mg/kg, while passiflora extract showed no effects on sleep latency even at a dose of 3000 mg/kg. No significant effects were observed with both herbal extracts on total times of wakefulness, non-rapid eye movement (non-REM) sleep and REM sleep. Flumazenil, a benzodiazepine receptor antagonist, at a dose of 3 mg/kg showed a significant antagonistic effect on the shortening in sleep latency induced by chamomile extract. No significant effects were observed with chamomile and passiflora extracts on delta activity during non-REM sleep. In conclusion, chamomile extract is a herb having benzodiazepine-like hypnotic activity.

American Chemical Society., Journal of Agricultural and Food Chemistry (2005) found that volunteers who consumed 5 cups of chamomile tea for two weeks showed an increased level of hippurate. Hippurate is associated with the botanical phenolics that boost immunity by fighting bacteria. This may explain chamomile tea's reputation for effectiveness in fighting colds and viruses.

American Chemical Society., Journal of Agricultural and Food Chemistry (2005) also found an increased level of the amino acid glycine in the test subjects' systems after drinking chamomile tea for two weeks. Glycine helps reduce muscle spasms and relax nerves, including the uterine cramps and nervous tension related to the menstrual cycle. Because chamomile may also have an estrogenic effect, women with hormone-dependent tumors such as breast or uterine cancer shouldn't drink it without talking first to their physician.

Cauffield JS, **Forbes HJ (1999),** stated that dietary supplement use has increased during the past decade. Epidemiologic studies suggest that patients turn to dietary supplements because of a reluctance to take prescription medications or a lack of satisfaction with the results. They often perceive dietary supplements to be a safer or more natural alternative. Patients with mental health conditions, including depression, anxiety, and sleep disorders, are among those who use dietary supplements. St. John's Wort is used to treat depression. Clinical studies comparing dietary supplements with low-dose antidepressants (maprotiline, amitriptyline, or imipramine at 75 mg/day) or high-dose antidepressants (imipramine at 150 mg/day) find no significant difference between treatments. Kava kava is used to treat anxiety. Clinical trials demonstrate it to be superior to placebo, and roughly equivalent to oxazepam 15 mg/day or bromazepam 9 mg/day. Agents discussed for use in sleep disorders include melatonin, valerian, 5-hydroxytryptamine, catnip, chamomile, gotu kola, hops, L-tryptophan, lavender, passionflower, skullcap, and valerian. Familiarity with the evidence for use and the possible resulting risks can help health professionals to guide patient decisions regarding use of dietary supplements.

Viola H, Wasowski C et al., Planta Medica (1995) stated that the dried flower heads of Matricaria recutita L. (Asteraceae) are used in folk medicine to prepare a spasmolytic and sedative tea. Our fractionation of the aqueous extract of this plant led to the detection of several fractions with significant affinity for the central benzodiazepine receptor and to the isolation and identification of 5,7,4'-trihydroxyflavone (apigenin) in one of them. Apigenin competitively inhibited the binding of flunitrazepam with a Ki of 4 microM and had no effect on muscarinic receptors, alpha 1-adrenoceptors, and on the binding of muscimol to GABAA receptors. Apigenin had a clear anxiolytic activity in mice in the elevated plusmaze without evidencing sedation or muscle relaxant effects at doses similar to those used for classical benzodiazepines and no

anticonvulsant action was detected. However, a 10-fold increase in dosage produced a mild sedative effect since a 26% reduction in ambulatory locomotor activity and a 35% decrement in hole-board parameters were evident. The results reported in this paper demonstrate that apigenin is a ligand for the central benzodiazepine receptors exerting anxiolytic and slight sedative effects but not being anticonvulsant or myorelaxant.

PART II: CONCEPTUAL FRAME WORK

SISTER CALLISTA ROY'S ADAPTATION MODEL

A conceptual framework refers to a framework of preposition for conducting research. Conceptual framework provides clear description of variable suggesting ways or method to conduct the study and guiding the interpretation, evaluation and integration of study findings**, (Polit and Hungler, 2003).**

The conceptual framework set up for the present study is the Sister Callista Roy's adaptation model. There are four major elements in this Roy's adaptation model that is the person or system, nursing, health and environment. Systems, coping mechanisms, and adaptive modes are used to address these elements.

SYSTEMS

A system is "a set of units so related or connected as to form a unity or whole and characterized by inputs, outputs and control and feedback procedures".

Here, institutionalized elderly are an open living system, they receive input or stimuli from both the environment and self.

INPUT

In Roy's system, input is identified as STIMULI, which can come from the environment or from within a person. Stimuli are classified as focal, contextual and residual. It also includes a person's adaptation level. Here the

person's adaptation level is determined by focal, contextual and residual stimuli.

1) Focal stimuli

The focal stimuli are 'the internal or external stimuli most immediately confronting the human system'.

In this study, the immediate focal stimuli are pathological changes, anticipation of adverse effects and unpleasant environment.

2) Contextual stimuli

Contextual stimuli are all other stimuli present in the situation that contribute to the effect of the focal stimuli.

In this study, the contextual stimuli are awareness during procedure, fear of post operative pain and prognosis, previous unpleasant experiences and Awareness during procedure, fear of health condition and prognosis, previous unpleasant experiences insomnia and anxiety.

3) Residual stimuli

Residual stimuli are factors that may be affecting behaviour but whose effects are not validated.

In this study residual stimuli are financial burden, changes in body image and body exposure.

THROUGHPUT

There are two interrelated subsystem in Roy's model.

1) Primary/control process subsystem
2) Secondary/ effector subsystem

CONTROL PROCESS SUBSYSTEM

The control process subsystem consists of regulator and cognator.

a) **Regulator**

The regulator coping system, by way of the physiological adaptive mode, responds automatically through neural, chemical and endocrine coping process.

In this, input/stimuli automatically stimulate the autonomic nervous system, which results increased secretion of catecholamine, glucocorticoids and epinephrine.

b) Congnator

Cognator coping system, by way of the self concept, interdependence and role function adoptive modes responds through

four cognitive emotive channels: perceptual information processing, learning, judgment and emotions.

Here, the changes in regulator (sympathetic nervous system) affects the cognator (psychological function), which is expressed as decreased level of insomnia and increased level of anxiety.

ADAPTIVE (EFFECTOR) MODES

Adaptive modes (physiological, self concept, role function and interdependence) are a classification of ways of coping that manifest regulator and cognator activity**.**

Here, changes in regulator and cognator affect his/her adaptive modes, which are manifested as follows,

Sl. No	Adaptive modes	Components	Evidences
1.	Physiological mode	Basic need	Heart rate, blood pressure, sensation of thirsty, nausea and restriction of movement
2.	Self concept mode	Physical self	Changes in body image
3.	Role function mode	Tertiary role function	Unable to cooperate with the medical team
4.	Interdependence mode	Independent behaviour	Seeking help

OUTPUT

Output is the outcome of system. Output refers to the patient's behaviour. The behaviours are assessed by using Semi-structured questionnaire used to assess the insomnia and anxiety based on the response. Chamomile tea was given to the experimental group. The output of system was reassessed. As per Roy's system output is categorized as adaptive response and ineffective response. Here, adopted response is no/low anxiety and ineffective response is moderate and high anxiety and Moderate/ Low insomnia.

CHAPTER – III

RESEARCH METHODOLOGY

CHAPTER – III

METHODOLOGY

Research Methodology is a way to systematically solve the research problem. In this chapter includes the description of research approach, research design, setting of the study, variables, sample, sample size, sampling technique, and criteria for sample selection, development and description of the tool, validity and reliability of the tool, method of data collection, procedure and plan for data analysis and interpretation of the data.

RESEARCH APPROACH

The **Evaluative research approach** is used to assess the effectiveness of chamomile tea on insomnia and anxiety among institutionalized elderly.

RESEARCH DESIGN

The research design used for the present study is **True experimental research design** (pre test post test control group) to assess the effectiveness of chamomile tea on insomnia and anxiety among institutionalized elderly.

Table.3.1. Schematic representation of the research design

Randomly selected institutionalized elderly		**Pre test**	**Intervention**	**Post test**
Experimental group	R	O_1	X	O_2
Control group	R	O_1	-	O_2

Keys used

E - Experimental group.

O_1 - pre test (to assess the level of insomnia and anxiety)

X - Intervention (chamomile tea)

O_2 - post test (to assess the level of insomnia and anxiety)

C - Control group.

R - Randomisation.

VARIABLES

Independent variables: Chamomile tea

Dependent variables: Insomnia and Anxiety.

Demographic variables: It includes Age, Gender**,** Education**,** Religion**,** Sleep habits**,** Types of illness**,** Employment and Individual monthly income.

SETTING OF THE STUDY

The study was conducted among institutionalized elderly at selected old age Homes such as Swathi Elder's Home (Guild of Service) which is nearby 3 Kms and Ozanom Old Age Home which is located nearby 2 Kms. Pilot Study was conducted at Swathi Elder's Home (Guild of Service) were situated in Thanjavur.

POPULATION

The population for the present study was all the institutionalized elderly.

SAMPLE

In this present study the sample were institutionalized elderly in selected old age homes, Thanjavur.

SAMPLE SIZE

The total sample size was 60 institutionalized elderly, out of which experimental group 30 and control group 30.

SAMPLING TECHNIQUE

All the institutionalized elderly, in the selected old age homes, Thanjavur, present during the period of data collection were selected as samples. The investigator selected the control and experimental group by simple random sampling technique of lottery method. The experimental group and control group patients selected from Swathi Elder's Home and Ozanom Old Age Home using lottery method of 30 samples for the experimental group and 30 samples for control group.

CRITERIA FOR SAMPLE SELECTION:

Inclusion Criteria

- The institutionalized elderly who were willing to participate in the study.
- The institutionalized elderly who understand English or Tamil.

Exclusion Criteria

- The institutionalized elderly who were having ragweed or other pollen grain allergies.
- The institutionalized elderly who were taking blood thinners.
- The institutionalized elderly who were having bleeding disorders.
- Mentally disabled
- Old age dementia
- Chronic Psychiatric disorders
- Who were chronically ill
- Who were suffering from visual and hearing impairment

REPORT OF THE PILOT STUDY

Pilot study was conducted to test the reliability, practicability, validity and feasibility of the tool. Pilot study was conducted for a period of 2 weeks. The investigator obtained a written consent from the authorities of Swathi Elder's Home (Guild of Service). The investigator obtained the oral consent from the participants prior to the study. Probability Simple Random sampling technique was used to select the samples. The pre test was conducted by using the semi structured Insomnia questionnaire and Standardized Zung Self-Rating Anxiety Scale. From the next day, Chamomile tea was provided to the (experiment group) for 7 days at one hour before the bed time and the post test was conducted on the 8^{th} day by using the same tools for both experimental and control groups. The result of the pilot study was analysed by the descriptive and inferential statistics and it showed the study was feasible to do. So the main study was proceeded.

RELIABILITY AND VALIDITY OF THE TOOL

The reliability and validity of the tool was established with Medical and Nursing experts. The tool was modified according to the suggestions and recommendations of experts and the tool was finalized. The reliability of the tool was established by test-retest method, (Karl Pearson co-efficient Formula)

METHOD OF DATA COLLECTION

Written formal permission was obtained from the authorities of the institutions. The investigator obtained the oral consent from the participants prior to the study. Probability Simple Random sampling technique was used to select the samples. The investigator conducted the pre test by using the semi structured Insomnia questionnaire to assess the Insomnia and Standardized Zung Self-Rating Anxiety Scale to assess the Anxiety. From the next day, Chamomile tea was provided to the (experiment group) for 7 days at one hour before the bed time and the post test was conducted on the 8^{th} day by using the same tools for both experimental and control groups.

SCORING AND INTERPRETATION PROCEDURE

(A) DESCRIPTION OF THE TOOL

The tool has 3 sections. They are;

Part-I - Demographic variables

Part-II- It consisted of Semi-structured questionnaire to assess the insomnia of the institutionalized elderly.

Part-III- It consisted of Standardized Zung Self-Rating Anxiety Scale to assess the anxiety of the institutionalized elderly

(B)SCORING OF THE TOOL

PART-II:

It consisted of 17 items related to Insomnia. It is a 5 point Likert Scale as Never, Rarely, Occasionally, Most nights / days, Always which carries the marks a 1, 2, 3, 4, 5 respectively.

Total score = 85

$$\frac{\text{Obtained score}}{\text{Total score}} \times 100$$

Table 3.2: Frequency & percentage for the levels of Insomnia

LEVEL OF INSOMNIA	SCORE	PERCENTAGE
Mild	17 – 43	≤50 %
Moderate	44– 64	51 – 75 %
Severe	65– 85	>75 %

PART-III

It is a Standardized Scale named as Zung Self-Rating Anxiety Scale. The SAS is a 20-item self-report assessment device built to measure anxiety levels, based on scoring in 4 groups of manifestations: cognitive, autonomic,

motor and central nervous system symptoms. Answering the statements a person should indicate how much each statement applies to him or her within a period of one or two weeks prior to taking the test. Each question is scored on a Likert-type scale of 1-4 (based on these replies: "a little of the time," "some of the time," "good part of the time," "most of the time"). The questions 5, 9, 13, 17, 19 are negatively worded to avoid the problem of set response, and the scoring is done upside down. Overall assessment is done by total score.

The total raw scores range from 20-80. The raw score then needs to be converted to an "Anxiety Index" score using the chart on the paper version of the test that can be found on the link below. The "Anxiety Index" score can then be used on this scale below to determine the clinical interpretation of one's level of anxiety:

Total score = 80

$$\frac{\text{Obtained score}}{\text{Total score}} \quad X\ 100$$

Table3.3: Frequency &percentage for the levels of anxiety

LEVEL OF ANXIETY	SCORE	PERCENTAGE
Normal	20-44	25 - 55 %
Mild to moderate	45-59	57 - 74 %
Severe	60-74	75-93%
Extreme	75-80	94-100%

PLAN FOR ANALYSIS

Table 3.4: Represents the plan for data analysis

S. NO.	DATA ANALYSIS	METHODS	REMARKS
1.	Descriptive statistics	Percentage, Frequency distribution and Mean, Standard Deviation	To describe the demographic variables of Institutionalized elderly in both experimental and control group.
		Correlation	To determine the relationship between the post test scores of Insomnia and anxiety of Institutionalized elderly in both experimental and control group.
2.	Inferential statistics	Paired "t"Test	To assess the effectiveness of Chamomile tea on Insomnia and Anxiety among Institutionalized elderly.
		Unpaired "t" test	To compare the post test levels of Insomnia and anxiety between the experimental and control group among the Institutionalized elderly.
		Chi-square test	To associate the pre test level of insomnia and anxiety with the selected demographic variables among the institutionalized elderly in experimental and control group.

PROTECTION OF HUMAN SUBJECTS

The research proposal was approved by the dissertation committee prior to conduct the pilot study. The permission was obtained from the head of the institutional authorities. After the clear explanation about the study, oral consent was obtained from each participant before started the data collection. Assurance was provided to the subjects that the anonymity, confidentiality and subject privacy would be guarded.

CHAPTER –IV

DATA ANALYSIS

CHAPTER – IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of data collected from 30 elderly to assess the effectiveness of chamomile tea on insomnia and anxiety among the institutionalized elderly in selected old age homes, Thanjavur. The data collected for the study was grouped and analyzed as per the objectives set for the study. The findings based on the descriptive and inferential statistical analysis are presented under the following sections.

ORGANIZATION OF DATA

The findings of the study were grouped and analyzed under the following sessions.

SECTION: 1

Description of the demographic variables.

SECTION: 2

Assessment of pretest and post test level of insomnia and anxiety among the institutionalized elderly in the experimental and control group.

SECTION: 3

Effectiveness of chamomile tea on insomnia and anxiety among the institutionalized elderly in the experimental and control group.

SECTION: 4

Comparison of post test level of Insomnia and Anxiety between the experimental and control group among institutionalized elderly.

SECTION: 5

Relationship between the post test level of insomnia and anxiety among the institutionalized elderly in the experimental and control group.

SECTION: 6

Association of pre test level of insomnia and anxiety among the institutionalized elderly with their selected demographic variables in the experimental and control group.

PRESENTATION OF DATA

SECTION: 1

DESCRIPTION OF THE DEMOGRAPHIC VARIABLES.

Table 4.1: Represents the frequency and percentage distribution of demographic variables of the institutionalized elderly in both experimental and control group.

N = 60(30+30)

Demographic Variables	Experimental Group		Control Group	
	No.	%	No.	%
Age in years				
61 - 65 yrs	3	10.0	4	13.33
66 - 70 yrs	21	70.0	20	66.67
71 - 75 yrs	2	6.7	5	16.67
76 - 80 yrs	4	13.33	1	3.33
81 and above	0	0	0	0.00
Gender				
Male	13	43.33	17	56.67
Female	17	56.67	13	43.33
Education				
Illiterate	7	23.33	7	23.33
Primary	8	26.67	14	46.67
Secondary	15	50.00	7	23.33
Undergraduate	0	0.00	2	6.67
Post graduate	0	0.00	0	0.00
Others	0	0.00	0	0.00
Religion				
Hindu	23	76.67	22	73.33

Demographic Variables	Experimental Group		Control Group	
	No.	%	No.	%
Christian	5	16.67	7	23.33
Muslim	2	6.67	1	3.33
Atheist	0	0.00	0	0.00
Others	0	0.00	0	0.00
Sleep habits				
Bed time rituals	5	16.67	2	6.67
Day time nap	6	20.00	5	16.67
Same bed time	13	43.33	14	46.67
All of the above	3	10.00	8	26.67
None of the above	3	10.00	1	3.33
Others	0	0.00	0	0.00
Type of illness				
Hypertension	8	26.67	11	36.67
Diabetes mellitus	14	46.67	10	33.33
Anemia	3	10.00	2	6.67
Cardiovascular disease	1	3.33	1	3.33
None of the above	3	10.00	2	6.67
Others	1	3.33	4	13.33
Employment				
Employed	0	0.00	0	0.00
Part time employed	2	6.67	1	3.33
Pensioner	10	33.33	10	33.33
Unemployed	18	60.00	19	63.33
Others	0	0.00	0	0.00
Individual monthly income				
<5,000/-	14	46.67	13	43.33
5,000 - 10,000/-	7	23.33	5	16.67

Demographic Variables	Experimental Group		Control Group	
	No.	%	No.	%
10,000 - 15,000/-	2	6.67	4	13.33
15,000 - 20,000/-	1	3.33	0	0.00
>20,000/-	0	0.00	0	0.00
Nil	6	20.00	8	26.67

The table 4.1 shows that in the experimental group, majority 21(70%) were in the age group of 65 – 70 years, 17(56.67%) were female, 15(50%) were educated up to secondary, 23(76.67%) were Hindus, 13(43.33%) had same bed time habit of sleeping, 14(46.67%) had diabetes mellitus, 18(60%) were unemployed and 14(46.67%) had individual monthly income of Rs.<5,000/-

Whereas in the control group, majority 20(66.67%) were in the age group of 65 – 70 years, 17(56.67%) were male, 14(46.67%) were educated up to primary, 22(73.33%) were Hindus, 14(46.67%) had same bed time habit of sleeping, 11(36.67%) had hypertension, 19(63.33%) were unemployed and 13(43.33%) had individual monthly income of Rs.<5,000/-

Figure 4.1: Represents the percentage distribution of age of the institutionalized elderly in the experimental and control group

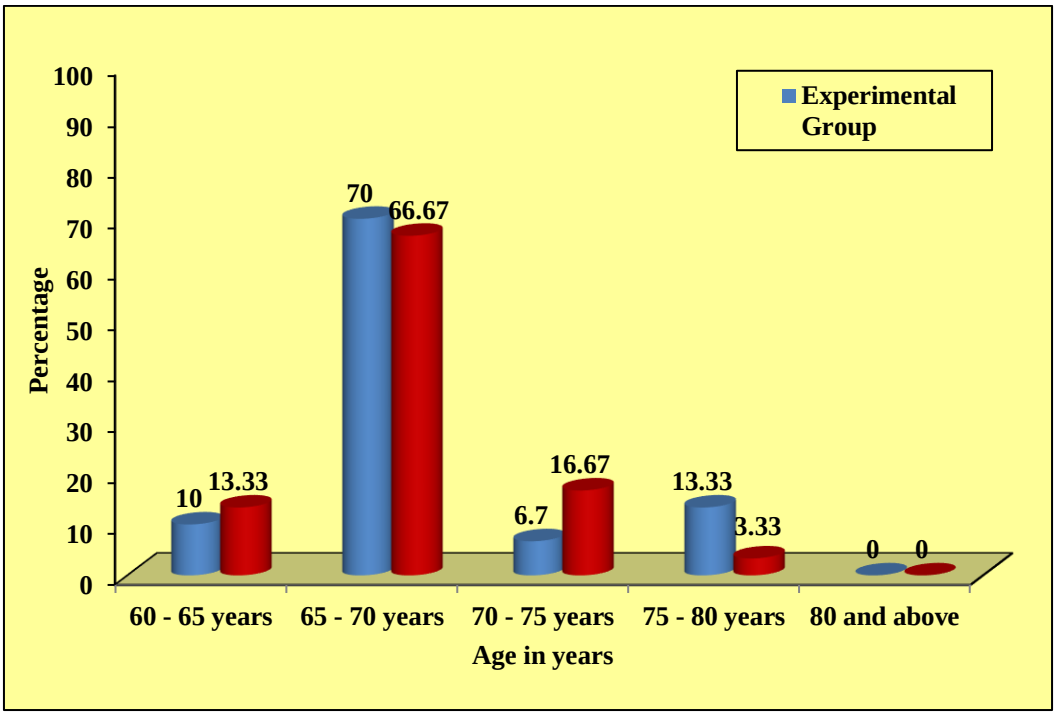


Figure 4.2: Represents the percentage distribution of gender of the institutionalized elderly in the experimental and control group

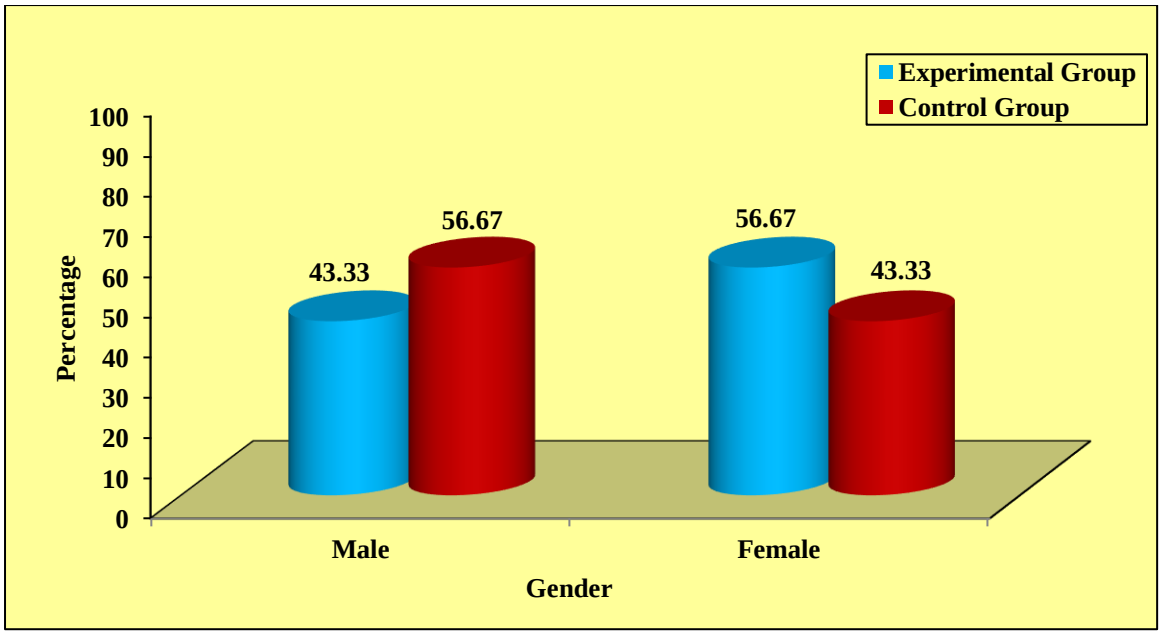


Figure 4.3: Represents the percentage distribution of education of the institutionalized elderly in the experimental and control group

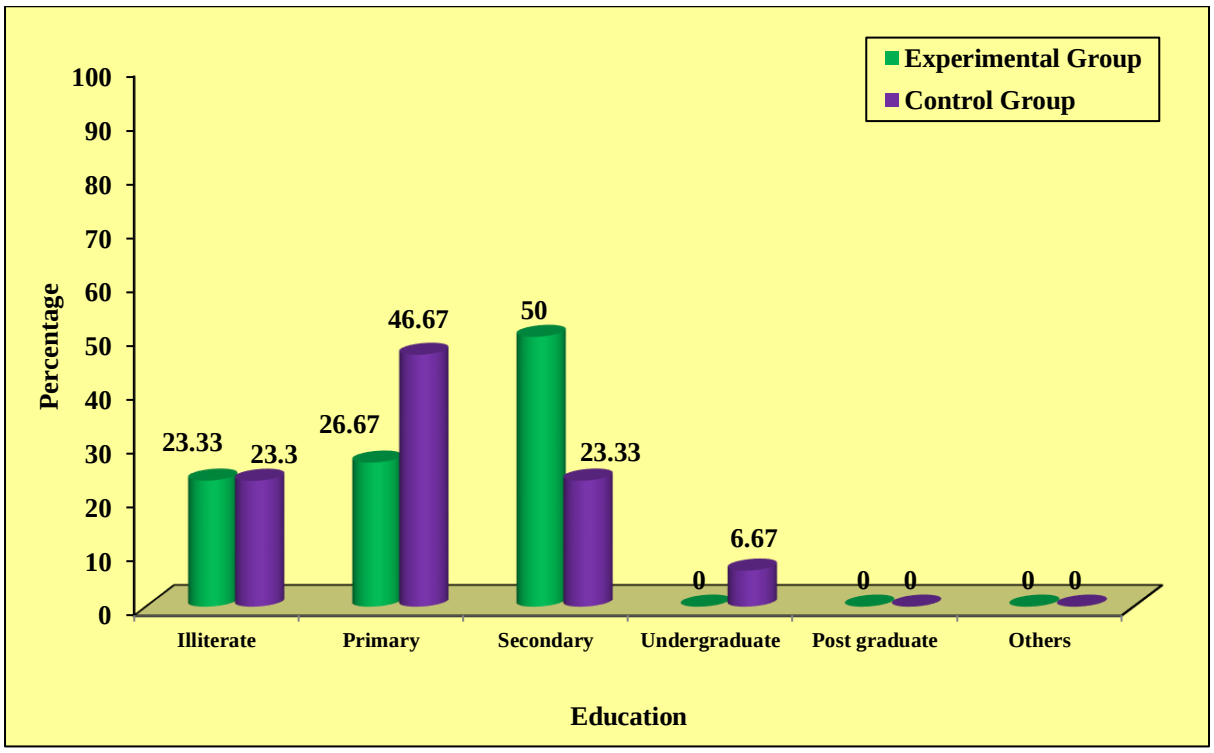


Figure 4.4: Represents the percentage distribution of religion of the institutionalized elderly in the experimental and control group

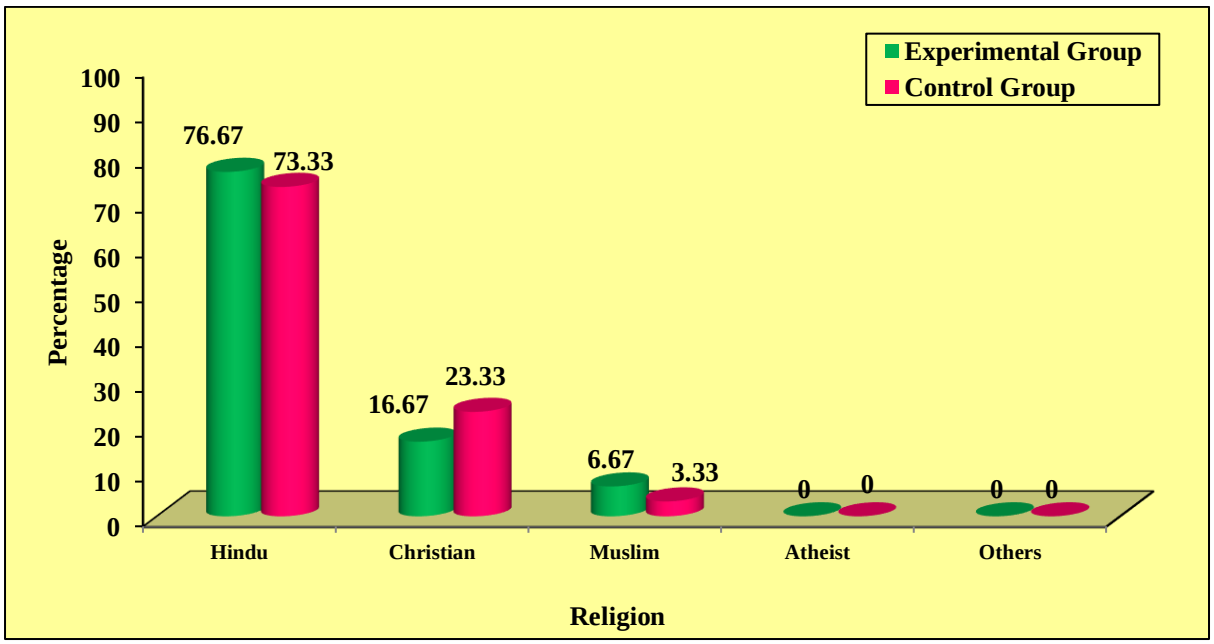


Figure 4.5: Represents the percentage distribution of sleep habits of the institutionalized elderly in the experimental and control group

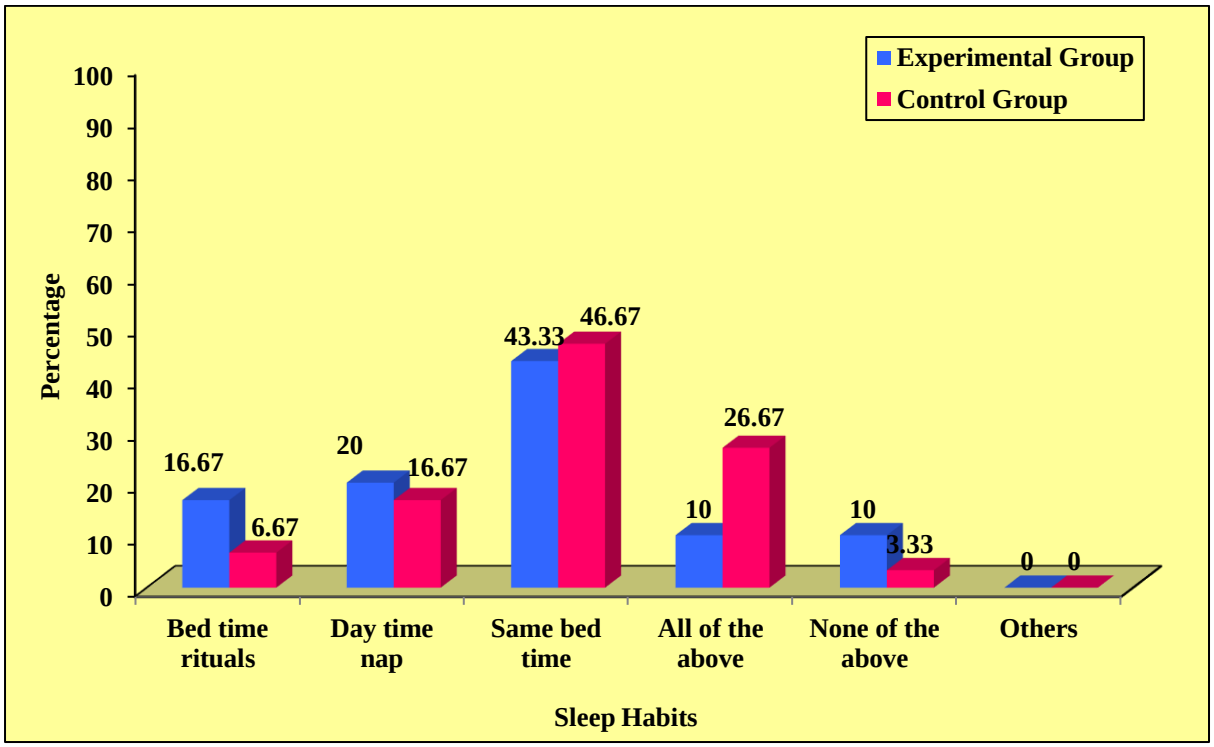


Figure 4.6: Represents the percentage distribution of type of illness of the institutionalized elderly in the experimental and control group

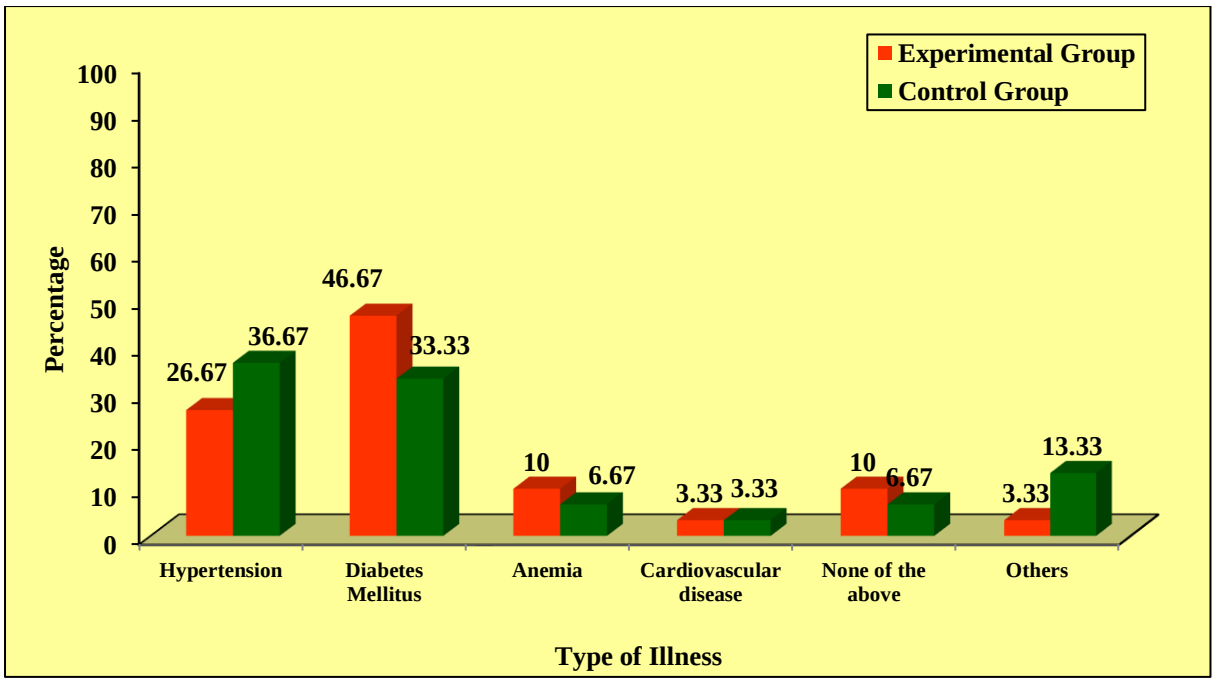


Figure 4.7: Represents the percentage distribution of employment of the institutionalized elderly in the experimental and control group

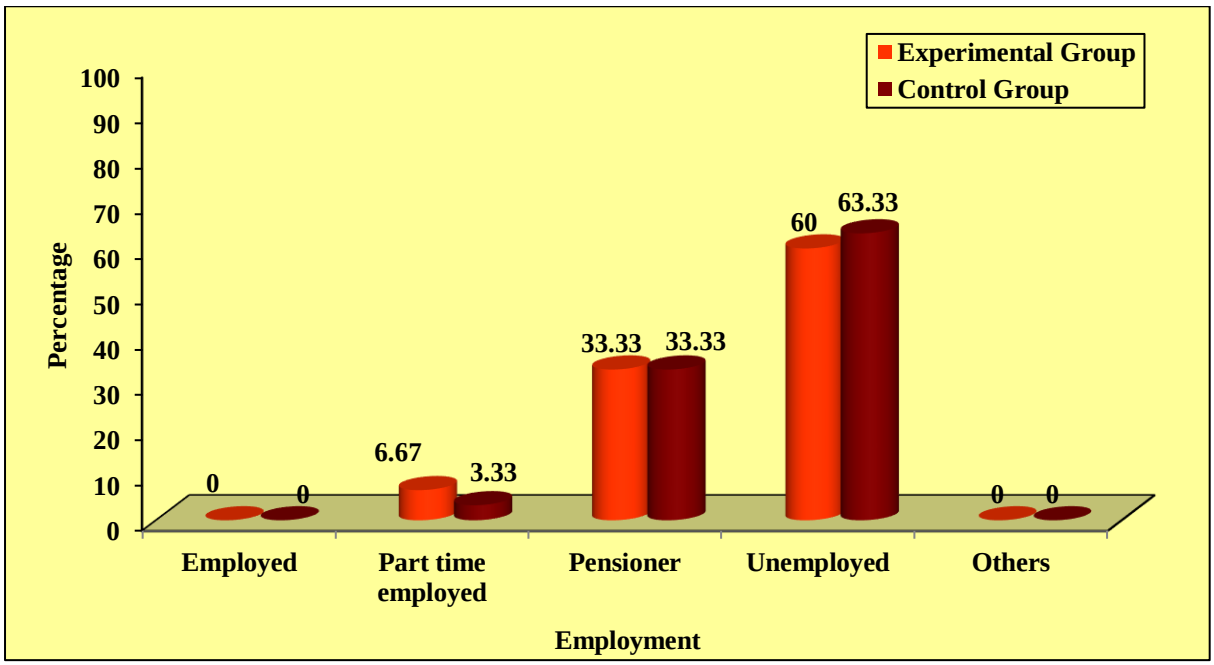
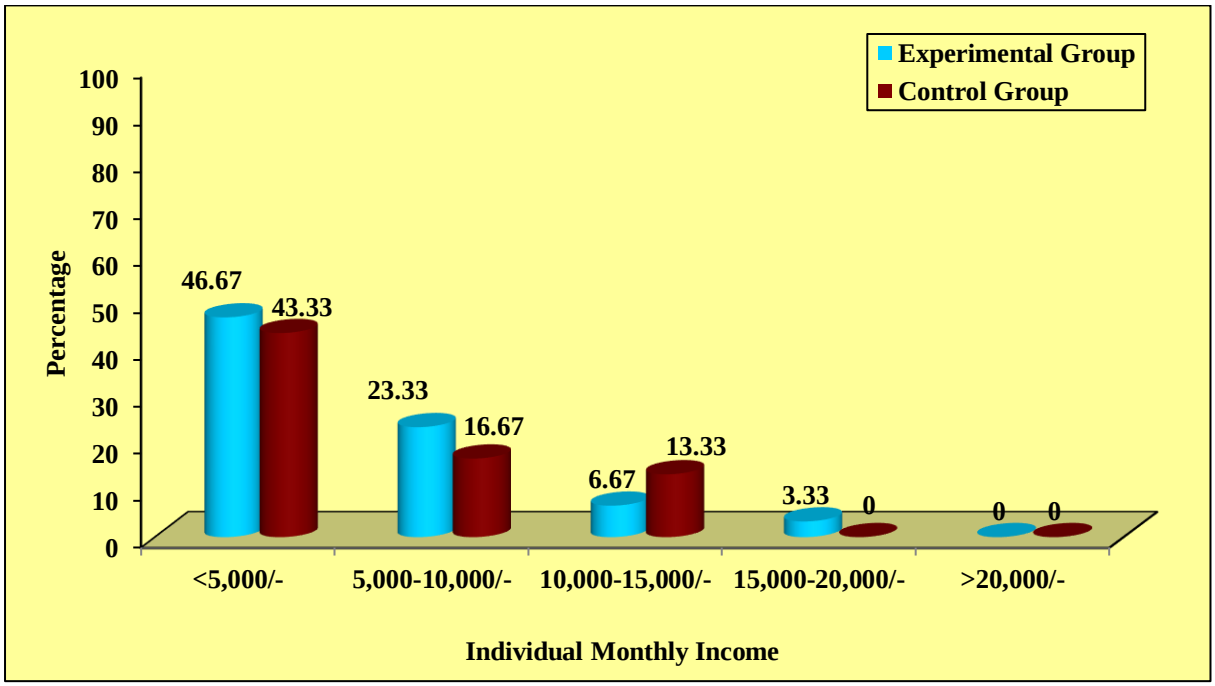


Figure 4.8: Represents the percentage distribution of individual monthly income of the institutionalized elderly in the experimental and control group



SECTION:2 ASSESSMENT OF PRETEST AND POST TEST LEVEL OF INSOMNIA AND ANXIETY AMONG THE INSTITUTIONALIZED ELDERLY IN THE EXPERIMENTAL AND CONTROL GROUP.

Table 4.2: Represents the Frequency and percentage distribution of pretest and post test level of insomnia among the institutionalized elderly in the experimental group.

N = 30

Insomnia	Mild (≤50%)		Moderate(51 – 75%)		Severe(>75%)	
	No.	%	No.	%	No.	%
Pretest	3	10.0	26	86.67	1	3.33
Post Test	26	86.67	4	13.33	0	0

The table 4.2 shows that in the pretest, majority 26(86.67%) had moderate level of insomnia, 3(10%) had mild level of insomnia and 1(3.33%) had severe level of insomnia respectively among the institutionalized elderly in the experimental group. Whereas in the post test after the administration of chamomile tea, majority 26(86.67%) had mild level of insomnia and 4(13.33%) had moderate level of insomnia among the institutionalized elderly in the experimental group.

Figure 4.9: Represents the Percentage distribution of pretest and post test level of insomnia among the institutionalized elderly in the experimental group

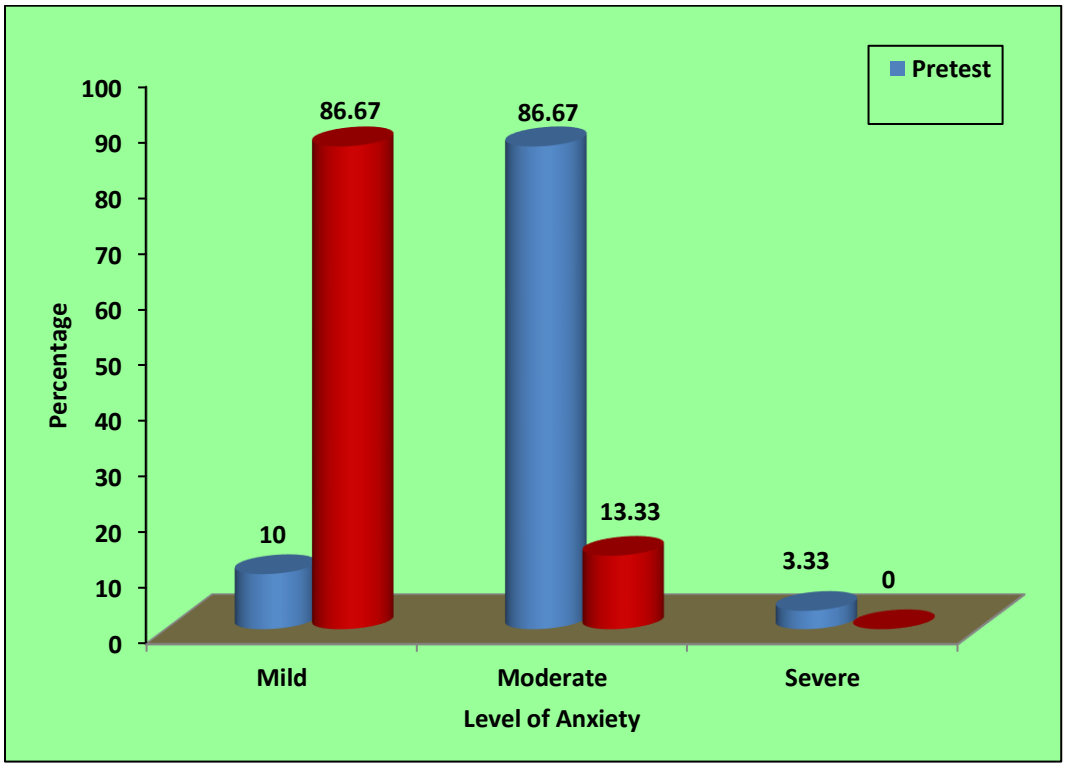


Table 4.3: Represents the Frequency and percentage distribution of pretest and post test level of anxiety among the institutionalized elderly in the experimental group.

N = 30

Anxiety	Normal (20 – 44)		Mild to Moderate (45 – 59)		Severe (60 – 74)		Extreme (75 – 80)	
	No.	%	No.	%	No.	%	No.	%
Pretest	0	0	16	53.33	12	40.0	2	6.67
Post Test	26	86.67	4	13.33	0	0	0	0

The table 4.3 shows that in the pretest, majority 16(53.33%) had mild to moderate level of anxiety, 12(40%) had severe level of anxiety and 2(6.67%) had extreme level of anxiety among the institutionalized elderly in the experimental group. Whereas in the post test after the administration of chamomile tea, majority 26(86.67%) had normal level of anxiety and 4(13.33%) had mild to moderate level of anxiety among the institutionalized elderly in the experimental group.

Figure 4.10: Percentage distribution of pretest and post test level of anxiety among the institutionalized elderly in the experimental group

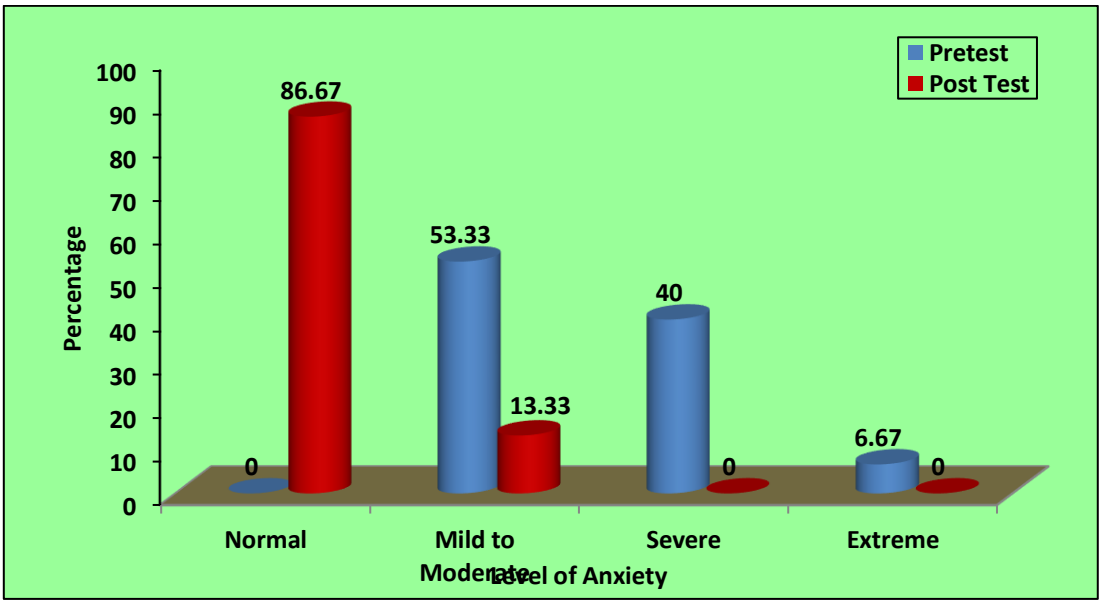


Table 4.4: Represents the Frequency and percentage distribution of pretest and post test level of insomnia among the institutionalized elderly in the control group.

N = 30

Insomnia	Mild (≤50%)		Moderate (51 – 75%)		Severe (>75%)	
	No.	%	No.	%	No.	%
Pretest	10	33.33	20	66.67	0	0
Post Test	13	43.33	17	56.67	0	0

The table 4.4 shows that in the pretest, majority 20(66.67%) had moderate level of insomnia and 10(33.33%) had mild level of insomnia among the institutionalized elderly in the control group. Whereas in the post test after the administration of chamomile tea, majority 17(56.67%) had moderate level of insomnia and 13(43.33%) had mild level of insomnia among the institutionalized elderly in the control group.

Figure 4.11: Represents the Percentage distribution of pretest and post test level of insomnia among the institutionalized elderly in the control group

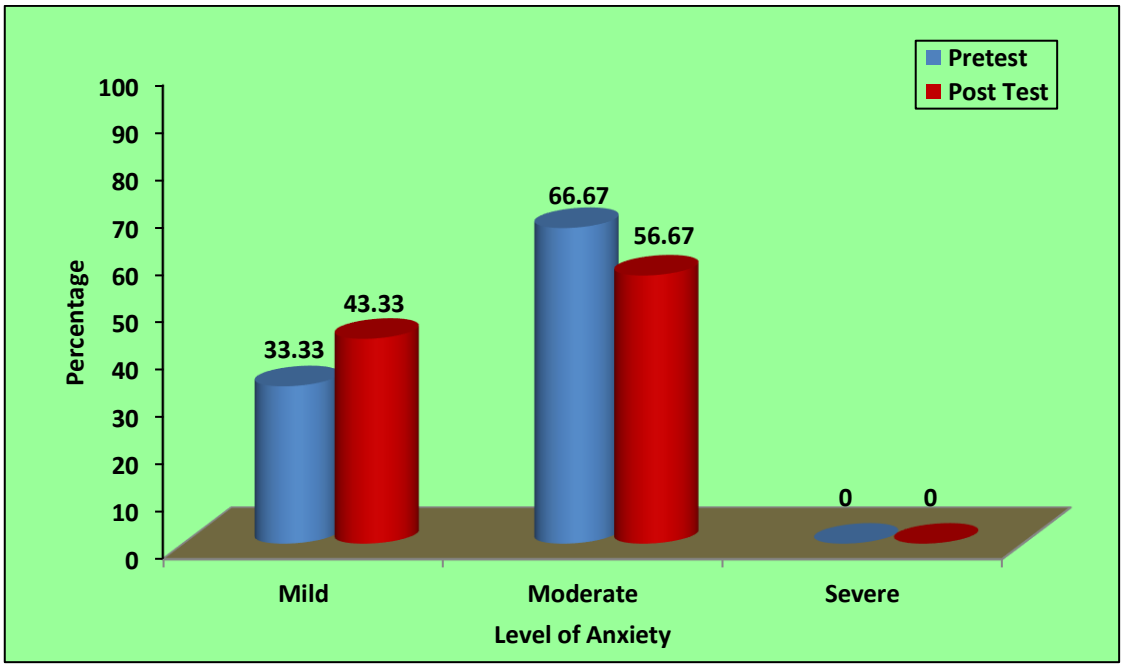


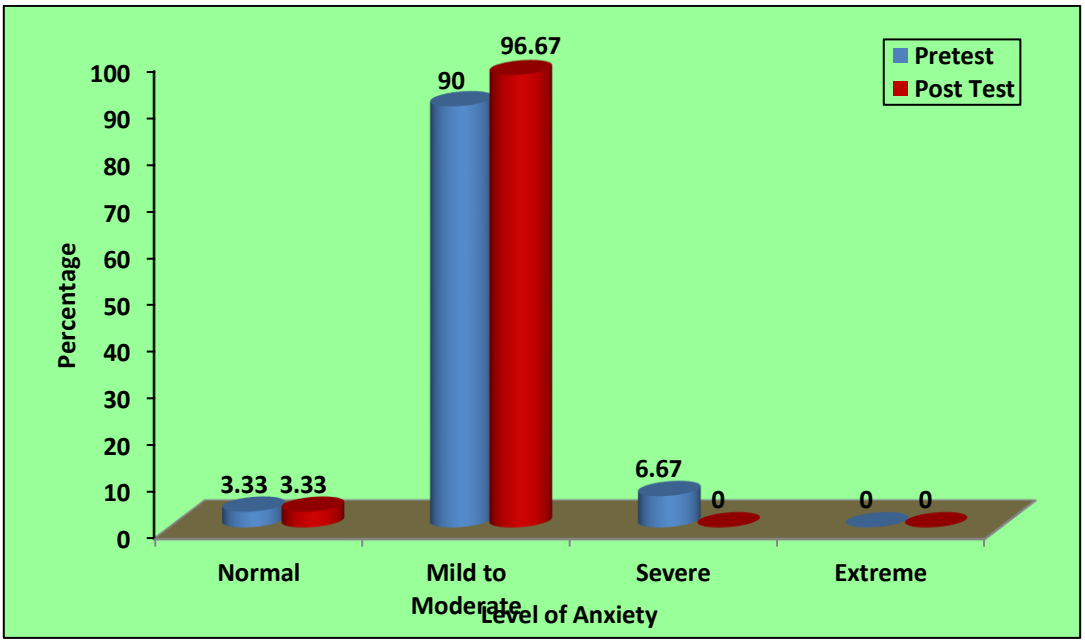
Table 4.5: Represents the Frequency and percentage distribution of pretest and post test level of anxiety among the institutionalized elderly in the control group.

N = 30

Anxiety	Normal (20 – 44)		Mild to Moderate (45 – 59)		Severe (60 – 74)		Extreme (75 – 80)	
	No.	%	No.	%	No.	%	No.	%
Pretest	1	3.33	27	90.0	2	6.67	0	0
Post Test	1	3.33	29	96.67	0	0	0	0

The table 4.5 shows that in the pretest, majority 16(53.33%) had mild to moderate level of anxiety and 14(46.67%) had severe level of anxiety among the institutionalized elderly in the control group. Whereas in the post test after the administration of chamomile tea, majority 29(96.67%) had mild to moderate level of anxiety and 1(3.33%) had normal level of anxiety among the institutionalized elderly in the control group.

Figure 4.12: Represents the Percentage distribution of pretest and post test level of anxiety among the institutionalized elderly in the control group



SECTION: 3 EFFECTIVENESS OF CHAMOMILE TEA ON INSOMNIA AND ANXIETY AMONG THE INSTITUTIONALIZED ELDERLY IN THE EXPERIMENTAL AND CONTROL GROUP.

Table 4.6: Represents the Comparison of pretest and post test level of insomnia among the institutionalized elderly in the experimental group.

N = 30

Insomnia	Mean	S.D	Paired 't' Value
Pretest	50.90	5.98	t = 19.511***
Post Test	32.80	8.01	

The table 4.6 shows that in the experimental group, the pretest mean score of insomnia was 50.90 and the SD of5.98 and the post test mean score of insomnia was 32.80 and the SD of8.01. The calculated paired 't' CV = 19.511and TV = 2.04 (CV > TV) which is significant at 0.05 level of experimental group. The above findings clearly indicate that the chamomile tea administered to the institutionalized elderly had significant reduction in the post test level of insomnia among institutionalized elderly in the experimental group.

Figure 4.13: Represents the Comparison of pretest and post test level of insomnia among the institutionalized elderly in the experimental group.

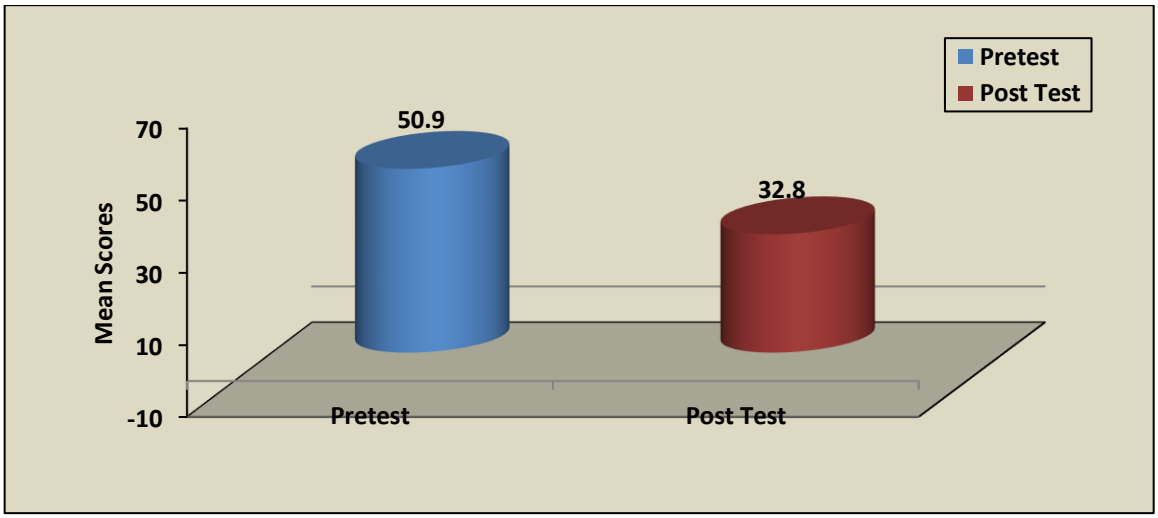


Table 4.7: Represents the Comparison of pretest and post test level of anxiety among the institutionalized elderly in the experimental group.

N = 30

Anxiety	Mean	S.D	Paired 't' Value
Pretest	59.86	5.74	t = 26.967***
Post Test	37.2	7.23	

The table 4.7 shows that in the experimental group, the pretest mean score of anxiety was 59.86and the SD of5.74 and the post test mean score of anxiety was 37.2and the SD of7.23. The calculated paired 't' value of t = 26.967 and TV = 2.04 (CV > TV) which is significant at 0.05 level of experimental group. The above findings clearly indicate that the chamomile tea administered to the institutionalized elderly had significant reduction in the post test level of anxiety among institutionalized elderly in the experimental group.

Figure 4.14: Represents the Comparison of pretest and post test level of anxiety among the institutionalized elderly in the experimental group.

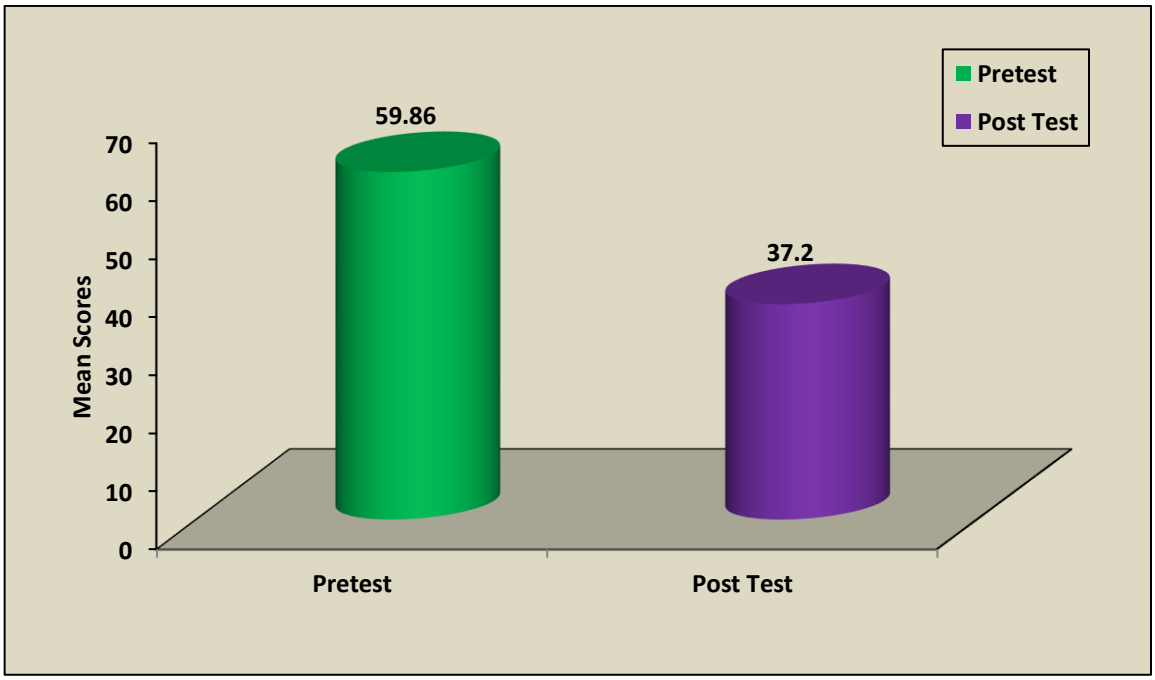


Table 4.8: Represents the Comparison of pretest and post test level of insomnia among the institutionalized elderly in the control group.

N = 30

Insomnia	Mean	S.D	Paired 't' Value
Pretest	44.76	3.42	t = 1.98
Post Test	43.56	3.91	N.S

The table 4.8 shows that in the control group, the pretest mean score of insomnia was 44.76 and the SD of 3.42 and the post test mean score of insomnia was 43.56and the SD of3.91. The calculated paired 't' value of t = 1.98and TV = 2.05 was found to be statistically not significant at 0.05 level of significance.

The above findings clearly indicate that there was no significant change in the level of insomnia among institutionalized elderly in the control group.

Figure 4.15: Represents the Comparison of pretest and post test level of insomnia among the institutionalized elderly in the control group.

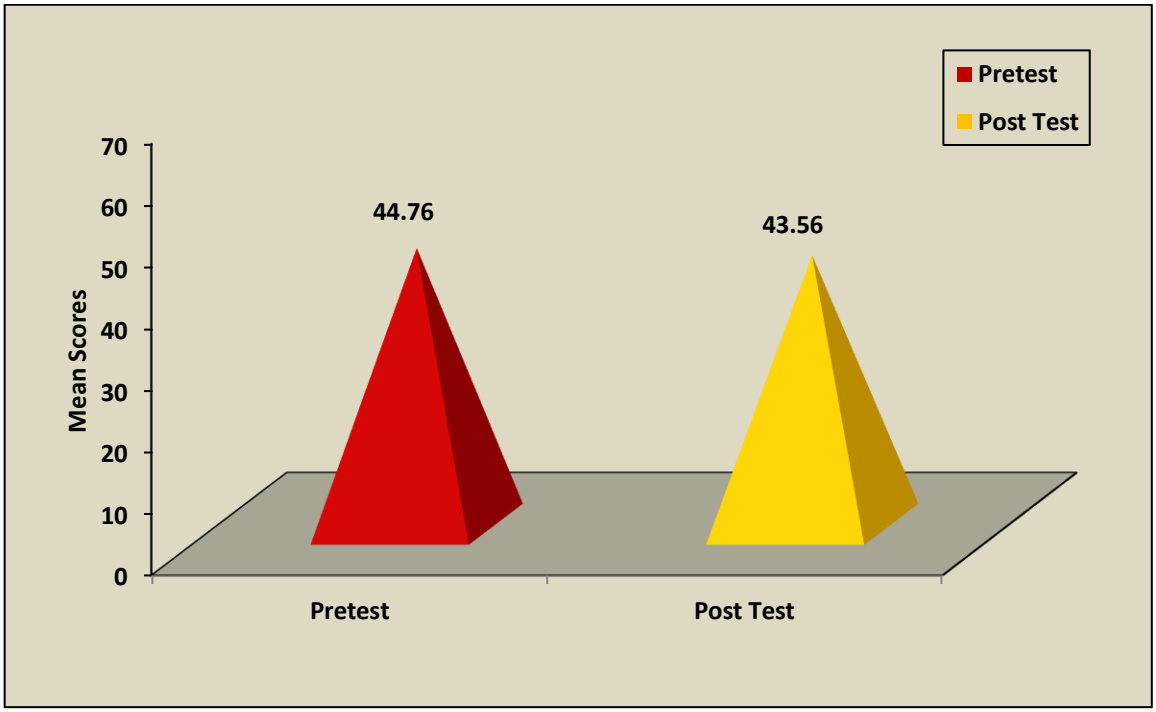


Table 4.9: Represents the Comparison of pretest and post test level of anxiety among the institutionalized elderly in the control group.

N = 30

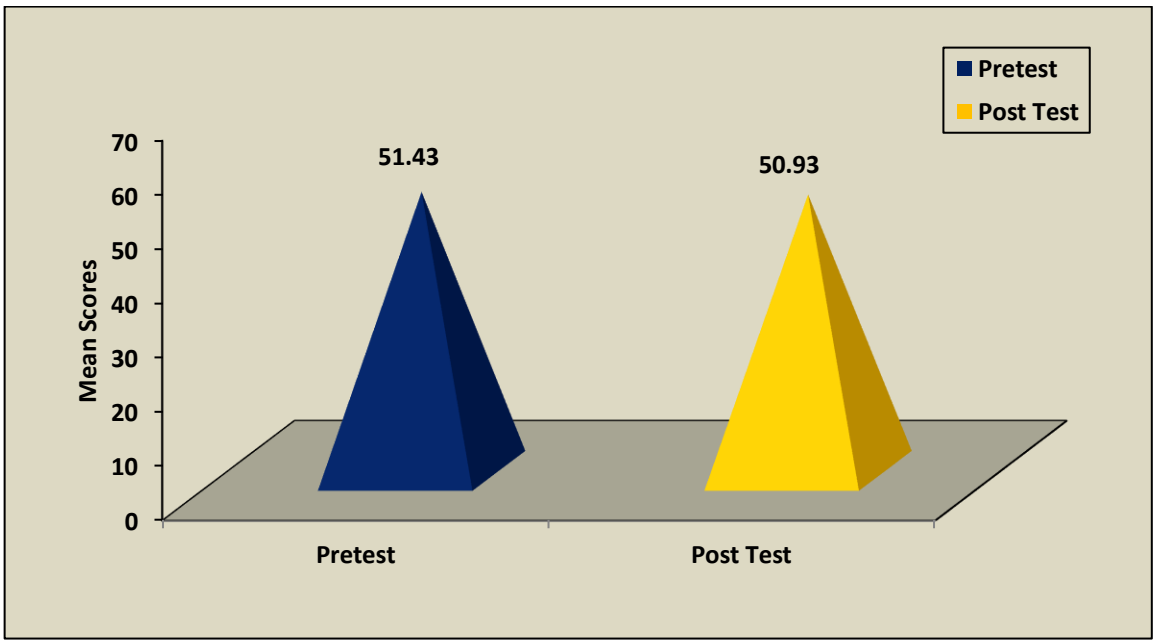
Anxiety	Mean	S.D	Paired 't' Value
Pretest	51.43	4.78	t = 0.926
Post Test	50.93	3.94	N.S

N.S – Not Significant

The table 4.9 shows that in the control group, the pretest mean score of anxiety was 51.43 and the SD of 4.78 and the post test mean score of anxiety was 50.93and SD of3.94. The calculated paired 't' value of t = 0.926and the TV = 2.04 was not found to be statistically significant.

The above findings clearly indicate that there was no significant change in the level of anxiety among institutionalized elderly in the control group.

Figure 4.16: Represents the Comparison of pretest and post test anxiety score among the institutionalized elderly in the control group.



SECTION:4 COMPARISON OF POST TEST LEVEL OF INSOMNIA AND ANXIETY AMONG INSTITUTIONALIZED ELDERLY BETWEEN THE EXPERIMENTAL AND CONTROL GROUP

Table 4.10: Comparison of post test level of insomnia among institutionalized elderly between the experimental and control group.

N = 30

Post Test	Mean	S.D	Unpaired 't' Value
Experimental Group	32.80	8.01	t = 6.613 ***
Control Group	43.56	3.91	

The table 4.10 shows that the post test mean score of insomnia in the experimental group was 32.80and SD of8.01 and the post test mean score of insomnia in the control group was 43.56and SD of3.91. The calculated unpaired 't' value of t = 6.613 and the TV = 2.04 was found to be significant at 0.05 level. The above findings clearly indicates that the chamomile tea administered to the experimental group had significant reduction in the post test level of insomnia.

Figure 4.17: Represents the Comparison of post test level of insomnia among institutionalized elderly between the experimental and control group.

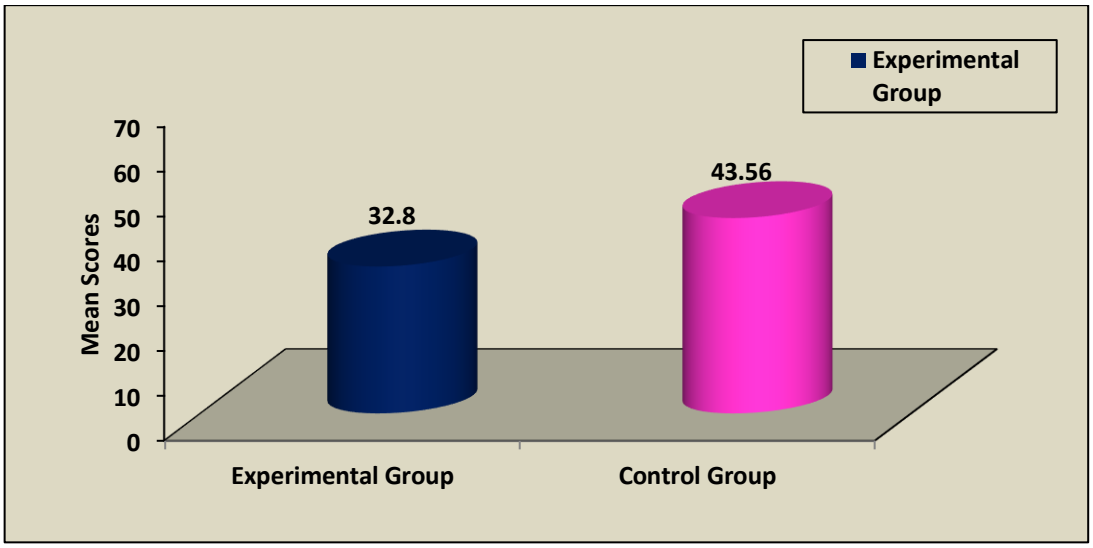


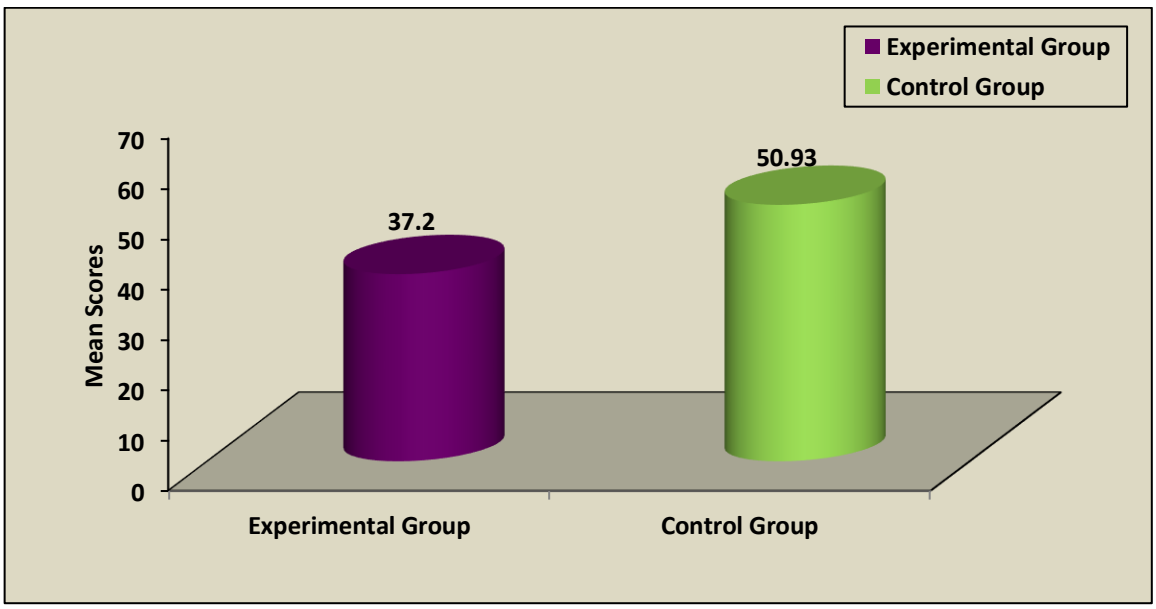
Table 4.11: Represents the Comparison of post test level of anxiety among institutionalized elderly between the experimental and control group.

N = 30

Post Test	Mean	S.D	Unpaired 't' Value
Experimental Group	37.20	7.23	t = 9.125 S***
Control Group	50.93	3.94	

The table 4.11 shows that the post test mean score of anxiety in the experimental group was 57.20 and SD of 7.23 and the post test mean score of anxiety in the control group was 50.93 and SD of 3.94. The calculated unpaired 't' value of t = 9.125 and the TV = 2.04 was found to be statistically significant at 0.05 level of significance. The above findings clearly indicates that the chamomile tea administered to the institutionalized elderly in the experimental group had significant reduction in the post test level of anxiety.

Figure 4.18: Represents the Comparison of post test level of anxiety among institutionalized elderly between the experimental and control group.



SECTION: 5 RELATIONSHIP BETWEEN POST TEST LEVEL OF INSOMNIA AND ANXIETY AMONG THE INSTITUTIONALIZED ELDERLY IN THE EXPERIMENTAL AND CONTROL GROUP.

Table 4.12: Represents the Correlation between post test level of insomnia and anxiety among the institutionalized elderly in the experimental and control group.

N = 60(30+30)

Group	Insomnia		Anxiety		'r' Value
	Mean	S.D	Mean	S.D	
Experimental Group	32.80	8.01	37.20	7.23	r = **0.8** positive and highly significant
Control Group	43.56	3.91	50.93	3.94	r = **0.4**positive and significant

S – Significant

The table 4.12 shows that the post test mean score of insomnia in the experimental group was 32.80 with SD 8.01 and the post test mean score of anxiety in the experimental group was 37.20 with SD 7.23. The calculated 'r' value of r = 0.8shows a positive correlation which was highly significant.

The table also shows that the post test mean score of insomnia in the control group was 43.56 with SD 3.91 and the post test mean score of anxiety in the control group was 50.93and SD of3.94. The calculated 'r' value of r = 0.4 shows a positive correlation which was found to be significant.

SECTION: 6 ASSOCIATION OF PRETEST AND POST TEST LEVEL OF INSOMNIA AND ANXIETY AMONG THE INSTITUTIONALIZED ELDERLY WITH SELECTED DEMOGRAPHIC VARIABLES IN THE EXPERIMENTAL AND CONTROL GROUP.

Table 4.13: Represents the Association of pretest level of insomnia among institutionalized elderly with their selected demographic variables in the experimental group.

N = 30

Demographic Variables	Mild (≤50%)		Moderate (51 – 75%)		Severe (>75%)		Chi-Square Value
	No.	%	No.	%	No.	%	
Age in years							χ^2=15.742 S*
60 - 65 yrs	0	0	3	10.0	0	0	
66 - 70 yrs	3	10.0	18	60.0	0	0	
71 - 75 yrs	0	0	1	3.3	1	3.3	
76 - 80 yrs	0	0	4	13.3	0	0	
81 and above	-	-	-	-	-	-	
Gender							χ^2=1.441 N.S
Male	1	3.3	11	36.7	1	3.3	
Female	2	6.7	15	50.0	0	0	
Education							χ^2=2.337 N.S
Illiterate	1	3.3	6	20.0	0	0	
Primary	0	0	8	26.7	0	0	
Secondary	2	6.7	12	40.0	1	3.3	
Undergraduate	-	-	-	-	-	-	
Post graduate	-	-	-	-	-	-	
Others	-	-	-	-	-	-	

Demographic Variables	Mild (≤50%)		Moderate (51 – 75%)		Severe (>75%)		Chi-Square Value
	No.	%	No.	%	No.	%	
Religion							
Hindu	3	10.0	20	66.7	0	0	
Christian	0	0	4	13.3	1	3.3	χ^2=5.980
Muslim	0	0	2	6.7	0	0	N.S
Atheist	-	-	-	-	-	-	
Others	-	-	-	-	-	-	
Sleep habits							
Bed time rituals	0	0	6	20.0	0	0	
Day time nap	0	0	6	20.0	1	3.3	χ^2=7.609
Same bed time	2	6.7	9	30.0	0	0	N.S
All of the above	1	3.3	2	6.7	0	0	
None of the above	0	0	3	10.0	0	0	
Others	-	-	-	-	-	-	
Type of illness							
Hypertension	1	3.3	6	20.0	1	3.3	
Diabetes mellitus	0	0	14	46.7	0	0	χ^2=15.833
Anemia	2	6.7	1	3.3	0	0	N.S
Cardiovascular disease	0	0	1	3.3	0	0	
None of the above	0	0	3	10.0	0	0	
Others	0	0	1	3.3	0	0	
Employment							
Employed	-	-	-	-	-	-	
Part time employed	0	0	2	6.7	0	0	χ^2=2.325
Pensioner	1	3.3	8	26.7	1	3.3	N.S
Unemployed	2	6.7	16	53.3	0	0	
Others	-	-	-	-	-	-	

Demographic Variables	Mild (≤50%)		Moderate (51 – 75%)		Severe (>75%)		Chi-Square Value
	No.	%	No.	%	No.	%	
Individual monthly income							χ^2=24.771 S***
<5,000/-	1	3.3	13	43.3	0	0	
5,000 - 10,000/-	0	0	7	23.3	0	0	
10,000 - 15,000/-	0	0	1	3.3	1	3.3	
15,000 - 20,000/-	0	0	0	0	0	0	
>20,000/-	-	-	-	-	-	-	
Nil	1	3.3	5	16.7	0	0	

S – Significant, N.S – Not Significant

The table 4.13 shows that the demographic variables age and individual monthly income had shown statistically significant association with pretest level of insomnia among institutionalized elderly in the experimental group at 0.05 level of significance and other demographic variables had not shown statistically significant association with pretest level of insomnia among institutionalized elderly in the experimental group.

Table 4.14: Represents the Association of pretest level of anxiety among institutionalized elderly with their selected demographic variables in the experimental group.

N = 30

Demographic Variables	Mild to Moderate (45 – 59)		Severe (60 – 74)		Extreme (75 – 80)		Chi-Square Value
	No.	%	No.	%	No.	%	
Age in years							χ^2=3.162 N.S
60 - 65 yrs	2	6.7	1	3.3	0	0	
66 - 70 yrs	12	40.0	7	23.3	2	6.7	
71 - 75 yrs	1	3.3	1	3.3	0	0	
76 - 80 yrs	1	3.3	3	10.0	0	0	
81 and above	-	-	-	-	-	-	
Gender							χ^2=1.833 N.S
Male	8	26.7	5	16.7	0	0	
Female	8	26.7	7	23.3	2	6.7	
Education							**χ^2=10.214 S***
Illiterate	2	6.7	5	16.7	0	0	
Primary	3	10.0	3	10.0	2	6.7	
Secondary	11	36.7	4	13.3	0	0	
Undergraduate	-	-	-	-	-	-	
Post graduate	-	-	-	-	-	-	
Others	-	-	-	-	-	-	
Religion							χ^2=1.921 N.S
Hindu	13	43.3	9	30.0	1	3.3	
Christian	2	6.7	2	6.7	1	3.3	
Muslim	1	3.3	1	3.3	0	0	
Atheist	-	-	-	-	-	-	
Others	-	-	-	-	-	-	

Demographic Variables	Mild to Moderate (45 – 59)		Severe (60 – 74)		Extreme (75 – 80)		Chi-Square Value
	No.	%	No.	%	No.	%	
Sleep habits							
Bed time rituals	4	13.3	2	6.7	0	0	
Day time nap	4	13.3	2	6.7	1	3.3	χ^2=3.463
Same bed time	4	13.3	6	20.0	1	3.3	N.S
All of the above	2	6.7	1	3.3	0	0	
None of the above	2	6.7	1	3.3	0	0	
Others	-	-	-	-	-	-	
Type of illness							
Hypertension	5	16.7	3	10.0	0	0	
Diabetes mellitus	5	16.7	8	26.7	1	3.3	χ^2=10.353
Anemia	1	3.3	1	3.3	1	3.3	N.S
Cardiovascular disease	1	3.3	0	0	0	0	
None of the above	3	10.0	0	0	0	0	
Others	1	3.3	0	0	0	0	
Employment							
Employed	-	-	-	-	-	-	
Part time employed	1	3.3	1	3.3	0	0	χ^2=2.514
Pensioner	7	23.3	3	10.0	0	0	N.S
Unemployed	8	26.7	8	26.7	2	6.7	
Others	-	-	-	-	-	-	
Individual monthly income							
<5,000/-	5	16.7	7	23.3	2	6.7	
5,000 - 10,000/-	4	13.3	3	10.0	0	0	χ^2=6.176
10,000 - 15,000/-	1	3.3	1	3.3	0	0	N.S
15,000 - 20,000/-	1	3.3	0	0	0	0	
>20,000/-	-	-	-	-	-	-	

Demographic Variables	Mild to Moderate (45 – 59)		Severe (60 – 74)		Extreme (75 – 80)		Chi-Square Value
	No.	%	No.	%	No.	%	
Nil	5	16.7	1	3.3	0	0	

S – Significant, N.S – Not Significant

The table 4.14 shows that the demographic variable education had shown statistically significant association with pretest level of anxiety among institutionalized elderly in the experimental group at 0.05 level of significance and other demographic variables had not shown statistically significant association with pretest level of anxiety among institutionalized elderly in the experimental group.

Table 4.15: Represents the Association of pretest level of insomnia among institutionalized elderly with their selected demographic variables in the control group.

N = 30

Demographic Variables	Mild (≤50%)		Moderate (51 – 75%)		Chi-Square Value
	No.	%	No.	%	
Age in years					χ^2=0.750 N.S
60 - 65 yrs	1	3.3	3	10.0	
66 - 70 yrs	7	23.3	13	43.3	
71 - 75 yrs	2	6.7	3	10.0	
76 - 80 yrs	0	0	1	3.3	
81 and above	-	-	-	-	
Gender					χ^2=0.068 N.S
Male	6	20.0	11	36.7	
Female	4	13.3	9	30.0	
Education					χ^2=1.393 N.S
Illiterate	2	6.7	5	16.7	
Primary	5	16.7	9	30.0	
Secondary	3	10.0	4	13.3	
Undergraduate	0	0	2	6.7	
Post graduate	-	-	-	-	
Others	-	-	-	-	
Religion					**χ^2=6.185 S***
Hindu	5	16.7	17	56.7	
Christian	5	16.7	2	6.7	
Muslim	0	0	1	3.3	
Atheist	-	-	-	-	
Others	-	-	-	-	

Demographic Variables	Mild (≤50%)		Moderate (51 – 75%)		Chi-Square Value
	No.	%	No.	%	
Sleep habits					χ^2=5.105 N.S
Bed time rituals	2	6.7	0	0	
Day time nap	1	3.3	4	13.3	
Same bed time	4	13.3	10	33.3	
All of the above	3	10.0	5	16.7	
None of the above	0	0	1	3.3	
Others	-	-	-	-	
Type of illness					χ^2=1.220 N.S
Hypertension	4	13.3	7	23.3	
Diabetes mellitus	3	10.0	7	23.3	
Anemia	1	3.3	1	3.3	
Cardiovascular disease	0	0	1	3.3	
None of the above	1	3.3	1	3.3	
Others	1	3.3	3	10.0	
Employment					χ^2=0.726 N.S
Employed	-	-	-	-	
Part time employed	0	0	1	3.3	
Pensioner	4	13.3	6	20.0	
Unemployed	6	20.0	13	43.3	
Others	-	-	-	-	
Individual monthly income					χ^2=2.316 N.S
<5,000/-	5	16.7	8	26.7	
5,000 - 10,000/-	2	6.7	3	10.0	
10,000 - 15,000/-	2	6.7	2	6.7	
15,000 - 20,000/-	-	-	-	-	
>20,000/-	-	-	-	-	
Nil	1	3.3	7	23.3	

S – Significant, N.S – Not Significant

The table 4.15 shows that the demographic variable religion had shown statistically significant association with pretest level of insomnia among institutionalized elderly in the control group at 0.05 level of significance and other demographic variables had not shown statistically significant association with pretest level of insomnia among institutionalized elderly in the control group.

Table 4.16: Represents the Association of pretest level of anxiety among institutionalized elderly with their selected demographic variables in the control group.

N = 30

Demographic Variables	Normal (20 – 44)		Mild to Moderate (45 – 59)		Severe (60 – 74)		Chi-Square Value
	No.	%	No.	%	No.	%	
Age in years							χ^2=5.472 N.S
60 - 65 yrs	0	0	3	10.0	1	3.3	
66 - 70 yrs	1	3.3	19	63.3	0	0	
71 - 75 yrs	0	0	4	13.3	1	3.3	
76 - 80 yrs	0	0	1	3.3	0	0	
81 and above	-	-	-	-	-	-	
Gender							χ^2=3.454 N.S
Male	1	3.3	16	53.3	0	0	
Female	0	0	11	36.7	2	6.7	
Education							χ^2=10.317 N.S
Illiterate	0	0	5	16.7	2	6.7	
Primary	0	0	14	46.7	0	0	
Secondary	1	3.3	6	20.0	0	0	
Undergraduate	0	0	2	6.7	0	0	
Post graduate	-	-	-	-	-	-	
Others	-	-	-	-	-	-	
Religion							**χ^2=17.955 S*****
Hindu	0	0	21	70.0	1	3.3	
Christian	1	3.3	6	20.0	0	0	
Muslim	0	0	0	0	1	3.3	
Atheist	-	-	-	-	-	-	
Others	-	-	-	-	-	-	

Demographic Variables	Normal (20 – 44)		Mild to Moderate (45 – 59)		Severe (60 – 74)		Chi-Square Value
	No.	%	No.	%	No.	%	
Sleep habits							
Bed time rituals	1	3.3	1	3.3	0	0	
Day time nap	0	0	5	16.7	0	0	
Same bed time	0	0	14	46.7	0	0	χ^2=30.347 S***
All of the above	0	0	7	23.3	1	3.3	
None of the above	0	0	0	0	1	3.3	
Others	-	-	-	-	-	-	
Type of illness							
Hypertension	0	0	11	36.7	0	0	
Diabetes mellitus	0	0	9	30.0	1	3.3	
Anemia	0	0	2	6.7	0	0	χ^2=17.861 N.S
Cardiovascular disease	0	0	1	3.3	0	0	
None of the above	1	3.3	1	3.3	0	0	
Others	0	0	3	10.0	1	3.3	
Employment							
Employed	-	-	-	-	-	-	
Part time employed	0	0	1	3.3	0	0	χ^2=3.170
Pensioner	1	3.3	9	30.0	0	0	N.S
Unemployed	0	0	17	56.7	2	6.7	
Others	-	-	-	-	-	-	
Individual monthly income							
<5,000/-	0	0	12	40.0	1	3.3	
5,000 - 10,000/-	0	0	5	16.7	0	0	χ^2=7.698
10,000 - 15,000/-	1	3.3	3	10.0	0	0	N.S
15,000 - 20,000/-	-	-	-	-	-	-	
>20,000/-	-	-	-	-	-	-	

Demographic Variables	Normal (20 – 44)		Mild to Moderate (45 – 59)		Severe (60 – 74)		Chi-Square Value
	No.	%	No.	%	No.	%	
Nil	0	0	7	23.3	1	3.3	

S – Significant, N.S – Not Significant

The table 4.16 shows that the demographic variable religion and sleep habits had shown statistically significant association with pretest level of anxiety among institutionalized elderly in the control group at 0.05 level of significance and other demographic variables had not shown statistically significant association with pretest level of anxiety among institutionalized elderly in the control group.

CHAPTER – V

DISCUSSION

CHAPTER – V

DISCUSSION

This chapter deals with the discussion which was based on the findings obtained from the statistical analysis and its relation to the objectives of the study, the conceptual frame work and the related literature.

This study was an Experimental Study To Assess The Effectiveness Of Chamomile Tea On Insomnia And Anxiety Among The Institutionalized Elderly In Selected Old Age Homes, Thanjavur.

Objective-1: Assessment of pretest and post test level of insomnia and anxiety among the institutionalized elderly in the experimental and control group.

In the experimental group, pretest level shows, majority 26(86.67%) had moderate level of insomnia, 3(10%) had mild level of insomnia and 1(3.33%) had severe level of insomnia, when the post test after the administration of chamomile tea, majority 26(86.67%) had mild level of insomnia and 4(13.33%) had moderate level of insomnia and for Anxiety, In pretest, majority 16(53.33%) had mild to moderate level of anxiety, 12(40%) had severe level of anxiety and 2(6.67%) had extreme level of anxiety and in post test after the administration of chamomile tea, majority 26(86.67%) had normal level of anxiety and 4(13.33%) had mild to moderate level of anxiety. Whereas in the control group, the pretest level shows, majority 20(66.67%) had moderate level of insomnia and 10(33.33%) had mild level of insomnia and in post test after the administration of chamomile tea, majority 17(56.67%) had moderate level of insomnia and 13(43.33%) had mild level of insomnia and for Anxiety, in pretest, majority 16(53.33%) had mild to moderate level of anxiety and 14(46.67%) had severe level of anxiety and in post test after the administration

of chamomile tea, majority 29(96.67%) had mild to moderate level of anxiety and 1(3.33%) had normal level of anxiety

Objective 2 : To determine the effectiveness of chamomile tea on insomnia and anxiety among the institutionalized elderly in experimental group.

In the experimental group, the pretest mean score of insomnia was 50.90 with SD 5.98 and the post test mean score of insomnia was 32.80 with SD 8.01 and the paired 't' value of t = 19.511 and the TV= 2.04 (CV>TV) was found to be statistically significant at 0.05 level of significance. Whereas In pretest mean score of anxiety was 59.86 and SD of 5.74 and the post test mean score of anxiety was 37.2 with SD 7.23. The paired 't' value of t = 26.967 and the TV= 2.04 (CV>TV) was found to be statistically significant at 0.05 level of significance. In the control group, the pretest mean score of insomnia was 44.76 with SD 3.42 and the post test mean score of insomnia was 43.56 with SD 3.91, the paired 't' value of t = 1.98 and the TV= 2.04 (CV<TV) was found to be statistically not significant at 0.05 level of significance. And for Anxiety, the pretest mean score of anxiety was 51.43 with SD 4.78 and the post test mean score of anxiety was 50.93 with SD 3.94, the paired 't' value of t = 0.926 and TV=2.04 (CV<TV) was found to be statistically not significant at 0.05 level of significance. Hence, the research hypothesis H1 was accepted for the experimental group and the same is rejected for the control group.

Objective 3: To compare the post test level of insomnia and anxiety between the experimental and control group among the institutionalized elderly.

In post test, mean score of insomnia in the experimental group was 32.80 with SD 8.01 and the post test mean score of insomnia in the control group was

43.56 with SD 3.91. The unpaired ‘t’ value of t = 6.613 and TV=2.04 was found to be statistically significant at 0.05 level of significance. Whereas, In post test mean score of anxiety in the experimental group was 57.20 with SD 7.23 and the post test mean score of anxiety in the control group was 50.93 with SD 3.94. The unpaired ‘t’ value of t = 9.12 5and the TV=2.04 was found to be statistically significant at 0.05 level of significance. It shows that the chamomile tea administered to the institutionalized elderly in the experimental group had significant reduction in the post test level of insomnia and anxiety than the institutionalized elderly in the control group who had not undergone any intervention. Hence, the hypothesis H2 was accepted for the experimental group and the same is rejected for the control group.

Objective 3 : To correlate the post test level of insomnia and anxiety between the experimental and control group among the institutionalized elderly.

In post test, mean score of insomnia in the experimental group was 32.80 with SD 8.01 and the post test mean score of anxiety in the experimental group was 37.20 with SD 7.23. The ‘r’ value of r = 0.8 shows a positive correlation which was found to be statistically significant, which clearly indicates that when the level of insomnia decreases the anxiety level of the institutionalized elderly also decreases. In control group the post test mean score of anxiety in the experimental group was 43.56 with SD 3.91 and the post test mean score of anxiety in the control group was 50.93 with SD 3.94. The ‘r’ value of r = 0.4 shows a positive correlation which was found to be statistically significant. Hence, the research hypothesis H3 was accepted.

Objectives 4: To associate the pre test level of insomnia and anxiety with the selected demographic variables among the institutionalized elderly in experimental and control group.

In the experimental group, It shows that the demographic variables age and individual monthly income had shown statistically significant association with level of insomnia at 0.05 level of significance, and for level of anxiety education had shown statistically significant association. Hence, the research hypothesis formulated H4 was accepted and the same was rejected for the other demographic variables.

In the control group, It shows that the demographic variable religion had shown statistically significant association with level of insomnia at 0.05 level of significance, and for level of anxiety religion and sleep habits had shown statistically significant association. Hence, the research hypothesis formulated H4 was accepted and the same was rejected for the other demographic variables.

CHAPTER –VI

SUMMARY & CONCLUSION

CHAPTER - VI

SUMMARY & CONCLUSION

This chapter deals with the summary of the study, its findings, conclusion and the implications for nursing administration, nursing practice, nursing education and nursing research. This study has been started with a few limitations and ends with suggestions and recommendations for research in future.

The present study was conducted to assess the effectiveness of Chamomile tea on Insomnia and Anxiety among institutionalized elderly.The study was a true experimental (pre test post test control group) design. A total 60 institutionalized elderly (30 members in experiment group and 30 members in control group) who meet the inclusion and exclusion criteria as the samples selected from the selected old age homes, Thanjavur. The samples were selected by simple random sampling technique by lottery method. The investigator first introduced herself to the samples and developed the communication with them. After the selection of Samples the interview conducted with the semi structured insomnia questionnaire and standardized Zung self rating anxiety scale

In the pretest majority 26(86.67%) had moderate level of insomnia, 3(10%) had mild level of insomnia and 1(3.33%) had severe level of insomnia respectively among the institutionalized elderly in the experimental group. Whereas in the post test after the administration of chamomile tea, majority 26(86.67%) had mild level of insomnia and 4(13.33%) had moderate level of insomnia among the institutionalized elderly in the experimental group. In the pretest, majority 16(53.33%) had mild to moderate level of anxiety, 12(40%) had severe level of anxiety and 2(6.67%) had extreme level of anxiety among the institutionalized elderly in the experimental group. Whereas in the post test

after the administration of chamomile tea, majority 26(86.67%) had normal level of anxiety and 4(13.33%) had mild to moderate level of anxiety among the institutionalized elderly in the experimental group.

For Control group, In the pretest, majority 20(66.67%) had moderate level of insomnia and 10(33.33%) had mild level of insomnia among the institutionalized elderly in the control group. Whereas in the post test after the administration of chamomile tea, majority 17(56.67%) had moderate level of insomnia and 13(43.33%) had mild level of insomnia among the institutionalized elderly in the control group.in the pretest, majority 16(53.33%) had mild to moderate level of anxiety and 14(46.67%) had severe level of anxiety among the institutionalized elderly in the control group. Whereas in the post test after the administration of chamomile tea, majority 29(96.67%) had mild to moderate level of anxiety and 1(3.33%) had normal level of anxiety among the institutionalized elderly in the control group.

The statistical analysis reveals that the Insomnia and anxiety of the experiment group was calculated by the paired ‘t’ test for Insomnia (‘t’ =19.511) and for Anxiety (‘t’ =26.967). This proves that there was a significant difference in pre test and post test levels of Insomnia and Anxiety for the experiment group at 0.05 level of significance. Where as in control group the Insomnia level was (‘t’ =1.98) and for Anxiety the level was (‘t’ =0.926) was revealed there was no difference in pre and post test levels of Insomnia and Anxiety for the control group at 0.05 level of significance. So the given Intervention Chamomile Tea was effective.

The statistical analysis reveals that the comparison of insomnia and anxiety of experimental and control group was calculated by the unpaired ‘t’ test, for insomnia, the post test mean score of insomnia in the experimental group was 32.80 and the SD of 8.01 and the post test mean score of insomnia in

the control group was 43.56 and the SD of 3.91. The calculated unpaired 't' value of t = 6.613 and the TV = 2.04 was found to be statistically significant at 0.05 level of significance and the findings clearly indicates that the chamomile tea administered to the institutionalized elderly in the experimental group had significant reduction in the post test level of insomnia than the institutionalized elderly in the control group who had not undergone any intervention. Whereas for anxiety, the post test mean score of anxiety in the experimental group was 57.20 and the SD of 7.23 and the post test mean score of anxiety in the control group was 50.93 and the SD of 3.94. The calculated unpaired 't' value of t = 9.125 and the TV = 2.04 was found to be statistically significant at 0.05 level of significance and the findings clearly indicates that the chamomile tea administered to the institutionalized elderly in the experimental group had significant reduction in the post test level of anxiety than the institutionalized elderly in the control group who had not undergone any intervention.

The statistical analysis of correlation between the post test scores of insomnia and anxiety of experimental and control group was calculated by "Karl Pearson correlation test" stated that the post test mean score of insomnia in the experimental group was 32.80 and the SD of 8.01 and the post test mean score of anxiety in the experimental group was 37.20 and the SD of 7.23. The calculated 'r' value of r = 0.8 shows a positive correlation which was highly significant for post test scores, which clearly indicates that when the level of insomnia decreases the anxiety level of the institutionalized elderly also decreases, the post test mean score of insomnia in the control group was 43.56 and the SD of 3.91 and the post test mean score of anxiety in the control group was 50.93 and the SD of 3.94. The calculated 'r' value of r = 0.4 shows a positive correlation which was found to be highly significant.

The statistical analysis to determine the association between the pre test levels of insomnia and anxiety among institutionalized elderly and their

selected demographic variables was calculated by using ‘chi square test’. the demographic variables age and individual monthly income had shown statistically significant association with pretest level of insomnia among institutionalized elderly in the experimental group at 0.05 level of significance and the demographic variable education had shown statistically significant association with pretest level of anxiety among institutionalized elderly in the experimental group at 0.05 level of significance and demographic variable religion had shown statistically significant association with pretest level of insomnia among institutionalized elderly in the control group at 0.05 level of significance and the demographic variable religion and sleep habits had shown statistically significant association with pretest level of anxiety among institutionalized elderly in the control group at 0.05 level of significance and other demographic variables had not shown statistically significant association with pretest level of insomnia among institutionalized elderly in the experimental group.

CONCLUSION

The main objective of the study was to determine the effectiveness of Chamomile tea on insomnia and anxiety among institutionalized elderly in selected old age homes, Thanjavur. The statistical analysis revealed that there was a significant difference between the pre test and post test level of insomnia and anxiety of experiment group, thus indicated the given Chamomile tea was effective.

NURSING IMPLICATIONS

The present study had certain nursing implication towards the nursing education, nursing practice, nursing administration and nursing research as follows.

NURSING EDUCATION

The nursing education is framed such a way that it equip the nurses with the essential knowledge, attitude and skills for meeting the needs of the society at primary, secondary and tertiary levels.

The study emphasized the need of early diagnosis and treatment for anxiety and Insomnia among institutionalized elderly which often go unnoticed and untreated for several reasons. This study will help to include the intervention of Chamomile tea for Insomnia and Anxiety, its effects, health benefits and adverse effects. It helps the elderly people to increase ease from anxiety and reduction in sleep disturbances and a sense of well being to improve their quality of life

NURSING PRACTICE

The nurses working in different health care settings play a vital role in enhancing the quality of life of individual, family members and community especially in Mental health units and care centers.

This study will help the Mental health unit and care centre nurses develop their knowledge & skill in awareness of Chamomile Tea, its preparation, usage, health benefits and adverse effects. It also helps the nurses to create awareness among the members of care centers, hospitalized clients and his\her relatives.

The community mental health nurses involve the home visit to give health education to the family members and old age people regarding the Chamomile tea and its effects.

NURSING ADMINISTRATION

The nursing administration should make necessary initiatives of:

- Collaborate with governing bodies of the institutions to formulate standard policies in providing chamomile tea considering their levels of insomnia and anxiety.
- Organize the seminars, workshop, conferences regarding prioritizing the need of the elderly and diagnosing and treating Insomnia and anxiety of the elderly among the nursing staffs and as well as the student nurses.

NURSING RESEARCH

- Promote more research on Chamomile tea among various settings.
- Disseminates the findings of the research through conferences, seminars and publishing in the journals.

RECOMMENDATIONS

- The comparative study can also be done to assess the effectiveness of Chamomile tea on insomnia and anxiety.
- The study can be done on large sample size to generalize the effectiveness of Chamomile tea.
- An experimental study can be done to assess the effectiveness of Chamomile tea on depression among the adolescents.

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ANNEXURE

REQUISITION FOR VALIDITY

From
Mrs.R. Subi Mol, II year M.Sc (N),
Our Lady Of Health College Of Nursing
Thanjavur.

Through Principal,

To

Respected Madam,

Subject: Requisition for content validity regarding.

I am M.Sc Nursing student of Our Lady of Health College of Nursing, Thanjavur. As a part of my course, I am doing a study on the topic mentioned below.

Topic: **"An Experimental Study to assess the effectiveness of Chamomile tea on insomnia and anxiety among institutionalized elderly in selected old age homes, Thanjavur."**

I kindly request you to give your valuable command and suggestions for the study.

ENCLOSURE

1. Proposal
2. TOOL I: Demographical data
3. TOOL II: Semi structured insomnia questionnaire
4. TOOL III: standardized Zung self-rating anxiety scale
5. Content of the study.

Thanking you,

Place: Yours sincerely

Date: Mrs. R. Subi Mol.

LIST OF EXPERTS

MEDICAL EXPERTS

1. **Dr .N. Arun Kumar, M.D., DNB.,**
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NURSING EXPERTS

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   Vel. R. S. Medical College of Nursing **,**
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3. **Mr.Francis M.Sc (N).,**
   Principal,
   St. Xavier College of Nursing**,**
   Kumbakonam.

CERTIFICATE FOR CONTENT VALIDITY

I hereby certify that I have validated the tool of Mrs. R. Subi mol II year of MSc (N) student of mental health nursing department Our Lady Of Health College Of Nursing, Thanjavur, who is undertaking the dissertation work on the following topic.

"An experimental study to assess the effectiveness of chamomile tea on insomnia and anxiety among the institutionalized elderly in selected old age homes, Thanjavur"

Place: Trichy

Date: 28/5/2016

Signature of the expert

Dr. Arunkumar. N

Name, Designation and Address

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CONSULTANT PSYCHIATRIST
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Place: Chennai. 62

Date: 30/5/16

Signature of the expert

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CERTIFICATE FOR CONTENT VALIDITY

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Place: AVADI

Date: 21/6/16

Signature of the expert

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Place: Thanjavur,

Date: 13/6/16

Signature of the expert

13/6/16

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CERTIFICATE FOR ENGLISH EDITING

This is to certify that the dissertation work " An Experimental Study To Assess The Effectiveness Of Chamomile Tea On Insomnia And Anxiety Among Institutionalized Elderly In Selected Old Age Homes, Thanjavur" done by Mrs. R. SUBI MOL Our Lady Of Health College Of Nursing, Thanjavur has been edited by me and the use of English in this dissertation is found to be appropriate

J. DAVID VINOD, M.A., B.Ed.,
மேற்பார்வையாளர்,
வயது வரம்பு,
அனைவருக்கும் கல்வி இயக்கம்,
தஞ்சாவூர்.

DATE: 27/7/16

PLACE: THANJAVUR

CERTIFICATE FOR TAMIL EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the dissertation work " An Experimental Study To Assess The Effectiveness Of Chamomile Tea On Insomnia And Anxiety Among Institutionalized Elderly In Selected Old Age Homes, Thanjavur" done by Mrs. R. SUBI MOL Our Lady Of Health College Of Nursing, Thanjavur has been edited by me and the use of Tamil in this dissertation is found to be appropriate

சா. இளஞ்செழியன்
எம்.ஏ.,எம்.எட்.,எம்.ஃபில்.,
முதுகலை ஆசிரியர் (தமிழ்)
அரசினர் ஆண்கள் மேனிலைப் பள்ளி
மேம்பாலம், தஞ்சாவூர்-613 001.

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OUR LADY OF HEALTH COLLEGE OF NURSING

DIOCESE OF TANJORE SOCIETY

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V.O.C. Nagar, Trichy Road, Thanjavur - 613 007. Tamilnadu, India. Phone No. 04362 - 272210

LETTER SEEKING PERMISSION TO CONDUCT PILOT STUDY

FROM

Mrs. R.SUBI MOL, II year M.Sc(N),

Our Lady Of Health College Of Nursing,

Thanjavur.

TO

THE SECRETARY,

Ozanom Old Age Home,

Thanjavur-1.

RESPECTED MADAM/SIR,

SUB: Requesting permission to conduct the pilot study.

I am Mrs. R. SUBI MOL, M.Sc(N) II year under THE TAMILNADU DR.M.G.R MEDICAL UNIVERSITY. As a part of my curriculum requirement, I would like to conduct a pilot study on the following topic:

"AN EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF CHAMOMILE TEA ON INSOMNIA AND ANXIETY AMONG THE INSTITUTIONALIZED ELDERLY IN SELECTED OLD AGE HOMES, THANJAVUR"

Hence I request you to kindly grant me permission to conduct the pilot study.

Kindly do the needful and oblige

Thanking you,

DATE:

Yours Faithfully

Forwarded by principal

14/6/16.

Mrs. R.SUBI MOL

permitted.

Recieved

PRINCIPAL,
Our Lady of Health College of Nursing,
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OZANAM HOME FOR THE AGED
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SUB: Requesting permission to conduct the pilot study.

I am Mrs. R. SUBI MOL, M.Sc(N) II year under THE TAMILNADU DR.M.G.R MEDICAL UNIVERSITY. As a part of my curriculum requirement, I would like to conduct a pilot study on the following topic:

"AN EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF CHAMOMILE TEA ON INSOMNIA AND ANXIETY AMONG THE INSTITUTIONALIZED ELDERLY IN SELECTED OLD AGE HOMES, THANJAVUR"

Hence I request you to kindly grant me permission to conduct the pilot study.

Kindly do the needful and oblige

Thanking you,

DATE:

Yours Faithfully

Mrs. R.SUBI MOL

Forwarded by principal

14/6/16.

PRINCIPAL,
Our Lady of Health College of Nursing,
Arulanandha Nagar 3rd Cross,
THANJAVUR-613 007.

SECRETARY,
Swathi Elders' Home,
GUILD OF SERVICE,
THANJAVUR

RESEARCH TOOL

PART-I (DEMOGRAPHIC VARIABLES)

SAMPLE NO:_____

HOME:_____

Samples are requested to kindly tick the options

1.Age in years

a. 61-65 years

b. 66-70 years

c. 71-75 years

d. 76-80 years

e. 81 and above

2. Gender

a. Male

b. Female

3. Education

a. Illiterate

b. Primary

c. Secondary

d. Undergraduate

e. Postgraduate

f. others, if yes, specify _____

4. Religion

a. Hindu

b. Christian

c. Muslim

d. Atheist

e. Others, if yes, specify _____

5. Sleep habits

a. Bed time rituals

b. day time nap

c. same bed time

d. all of the above

e. none of the above

f. others, if yes, specify _____

6. Types of illness

a. Hypertension

b. Diabetes Mellitus

c. Anemia

d. Cardiovascular diseases

e. none of the above

f. others, if yes, specify _____

7. Employment

a. Employed

b. Part time employed

c. pensioner

d. unemployed

e. others, if yes, specify _____

8. Individual monthly income

a. <5,000 /-

b. 5,000 – 10,000 /-

c. 10,000 – 15,000 /-

d. 15,000 – 20,000 /-

e. >20,000 /-

f. Nil

PART II- SEMI STRUCTURED INSOMNIA QUESTIONNAIRE

Sl. No.	Questions	Never	Rarely	Occasionally	Most Nights/ Days	Always
1.	Do you have trouble falling asleep?					
2.	Do you have trouble staying asleep?					
3.	Do you wake up un-refreshed?					
4.	Do you take anything to help you sleep?					
5.	Do you use alcohol to help you sleep?					
6.	Do you have any medical condition that disrupts your sleep?					
7.	Have you lost interest in hobbies or activities?					
8.	Do you feel sad, irritable, or hopeless?					
9.	Do you feel nervous or worried?					
10.	Do you think something is wrong with your body?					
11.	Are you a shift worker or is your sleep schedule irregular?					
12.	Are your legs restless and/or uncomfortable before bed?					
13.	Have you been told that you are restless or that you kick your legs in your sleep?					
14.	Do you have any unusual behaviors or movements during sleep?					
15.	Do you snore?					
16.	Has anyone said that you stop breathing, gasp, snort, or choke in your sleep?					
17.	Do you have difficulty staying awake during the day?					

PART III ZUNG SELF-RATING ANXIETY SCALE

Sl. No,	Questions	A little of the time	Some of the time	Good part of the time	Most of the time
1.	I feel more nervous and anxious than usual.				
2.	I feel afraid for no reason at all.				
3.	I get upset easily or feel panicky.				
4.	I feel like I'm falling apart and going to pieces.				
5.	I feel that everything is all right and nothing bad will happen.				
6.	My arms and legs shake and tremble.				
7.	I am bothered by headaches neck and back pain.				
8.	I feel weak and get tired easily.				
9.	I feel calm and can sit still easily.				
10.	I can feel my heart beating fast.				
11.	I am bothered by dizzy spells.				
12.	I have fainting spells or feel like it.				
13.	I can breathe in and out easily.				
14.	I get feelings of numbness and tingling in my fingers & toes.				
15.	I am bothered by stomach aches or indigestion.				
16.	I have to empty my bladder often.				
17.	My hands are usually dry and warm.				
18.	My face gets hot and blushes.				
19.	I fall asleep easily and get a good night's rest.				
20.	I have nightmares.				

nghJthd tptuk;

1. taJ tUlq;fspy;
   (m) 61 - 65 taJ
   (M) 66 - 70 taJ
   (,) 71 - 75 taJ
   (<) 76 - 80 taJ
   (c) 81 f;F Nky;

2. ghypdk;
   (m) Mz;
   (M) ngz;

3. fy;tp
   (m) gbg;gwptpy;yhjtu;
   (M) Kjy; epiy fy;tp
   (,) ,uz;lhk; epiy fy;tp
   (<) ,sq;fiy
   (c) KJfiy
   (C) NtW> Mk; vdpd; tpthpf;f

.....

4. kjk;
   (m) ,e;J
   (M) fpwp];jtk;
   (,) ,];yhk;
   (<) ehj;jpfk;
   (c) NtW> Mk; vdpd; tpthpf;f

.....

5. J}f;fg; gof;fq;fs;

(m) gLf;if Neu rlq;Ffs;

(M) fhiy Neu rpW J}f;fk;

(,) mNj gLf;if Neuk;

(<) Nkw;fz;litfs; midj;Jk;

(c) Nkw;fz;litfspy; VJkpy;iy

(C) NtW> Mk; vdpd;

tpthpf;f.....

6. Neha; tiffs;

(m) cah; ,uj;j mOj;jk;

(M) ePupopT Neha;

(,) ,uj;j Nrhif

(<) ,jaehs Neha;fs;

(c) Nkw;fz;litfspy; VJkpy;iy

(C) NtW> Mk; vdpd; tpthpf;f

.....

7. Ntiy tha;g;G

(m) gzpapy; ,Ug;gtu;

(M) gFjp Neu gzpapy; ,Ug;gtu;

(,) Xa;T+jpak; ngWgth;

(<) Ntiyaw;wth;

(c) NtW> Mk; vdpd;

tpthpf;f.....

8. jdp kdpj khj tUkhdk;

(m) < 5>000/-

(M) 5>000 - 10>000/-

(,) 10>000 - 15>000/-

(<) 15>000 - 20>000/-

(c) > 20>000/ -

(C) tUkhdkw;wtH

,d;N]hk;dpah];f;uPdpq; Ft\;bNdh;

t. vz;	fle;j xUkhj fhykhf	rpwe;j gjpiy tl;lkplTk;				
		xU nghOJk; ,y;iy	mupjhf	mbf;fb	ngUk;ghyhf	vg;nghOJk;
1.	J}f;fk; tUtjpy; njhe;juT cs;sjh?					
2.	J}f;fk; epiyg;gjpy; njhe;juT cs;sjh?					
3.	Gj;Jzh;tpd;ikAld; tpopf;fpwPu;fsh?					
4.	J}f;fk; tUtjw;fhf vijahtJ vLj;Jf; nfhs;fpwPu;fsh?					

5.	J}q;f cjtpahf kJ mUe;JfpwPu;fsh?					
6.	cq;fs; J}f;fj;ij nfLf;Fk; tpjkhf cq;fSf;F VNjDk; kUj;Jt epiy cs;sjh?					
7.	nghOJNghf;F kw;Wk; eltbf;iffspy; ehl;lk; ,oe;Js;sPh;fsh?					
8.	Nrhfk;> Kd;Nfhgk; my;yJ ek;gpf;ifaw;wjhf czh;fpwPh;fsh?					
9.	gjw;wkhfNth ftiyahfNth czh;fpwPh;fsh?					
10.	cq;fs; clk;gpy; VjhtJ gpur;rid ,Ug;gjhf vz;ZfpwPh;fsh?					
11.	ePq;fs; khw;W Neu Ntiy nra;gtuh my;yJ xOq;fw;w J}f;f ml;ltiz nfhz;ltuh?					
12.	cq;fs; fhy;fs; mikjpaw;W JUJUntd;W ,Uf;fpwjh my;yJ gLf;iff;F Kd; trjpf; Fiwthf ,Uf;fpwjh?					
13.	ePq;fs; J}f;fj;jpy; fhy;fis cijf;fpwPh;fs; vd;Wk; mikjpaw;W fhzg;gLfpwPu;fs; vd;Wk; $wg;gl;lJ cz;lh?					
14.	ePq;fs; J}f;fj;jpy; tof;fj;jpw;F khwhd eltbf;ifAk; mirTfSk; nfhz;ltuh?					

15.	Fwl;il tpLtPu;fsh?					
16.	ePq;fs; J}f;fj;jpy; %r;ir epWj;jpajhfTk;> %r;Rj; jpzwpajhfTk;> milg;G Vw;gl;ljhfTk; $wg;gl;lJ cz;lh?					
17.	gfy; Ntisapy; tpopj;jpUf;f rpukg;gl;lJ cz;lh?					

[q; nry;/g; Nubq; Md;irl;b];Nfy;

t. vz;	rupahd fl;lj;jpy; (.....) FwpaplTk;	nrhw;g Neuq;fspy;	rpy Neuq;fspy;	mjpfgbahd Neuq;fspy;	ngUk;ghyhd Neuq;fspy;
1.	tof;fj;ijtpl ,d;Dk; $Ljyhd Vf;fj;ijAk; gjw;wj;ijAk; czu;fpNwd;.				
2.	xU fhuzKkpd;wp mr;rkhf czu;fpNwd;.				

3.	Rygkhf vupr;rYk; gPjpAk; milfpNwd;.				
4.	tpOtJ NghyTk; Jz;Lfshf ciltJ NghyTk; czh;fpNwd;.				
5.	midj;Jk; rupaha; ,Ug;gjhfTk; nfl;litfs; NehplhJ vdTk; czh;fpNwd;.				
6.	vd; iffSk; fhy;fSk; eLq;FfpwJ.				
7.	jiy> fOj;J kw;Wk; KJFtyp vdf;F njhy;iy nfhLf;fpwJ.				
8.	Rygkhf fisg;giltjhfTk; gytPdkhfTk; czh;fpNwd;.				
9.	mikjpahf czh;fpNwd; vd;dhy; Rygkhf mirtw;W mku;e;J nfhs;s KbAk;.				
10.	vd; ,jak; Ntfkhf Jbg;gij vd;dhy; czuKbfpwJ.				
11.	fpwf;fkhd Mw;wy; vdf;F njhy;iy nfhLf;fpwJ.				
12.	vdf;F kaf;fMw;wy; ,Uf;fpwJ my;yJ mJNghy; czu;fpNwd;.				
13.	vd;dhy; Rygkhf cs;%r;R ntsp%r;R vLf;f KbfpwJ.				
14.	vd; if kw;Wk; fhy; tpuy;fspy; $r;rk; kw;Wk; czh;tpy;yhj epiy Vw;gLfpd;wJ.				
15.	tapw;Wtyp kw;Wk; m[Puzk; vd;id njhy;iy nra;fpwJ.				

16.	mbf;fb rpWePh;g;igapid fhyp nra;a Ntz;b ,Uf;fpwJ.				
17.	vd; iffs; tof;fkhf cyh;thfTk; ntg;gkhfTk; ,Uf;Fk;.				
18.	vd; Kfk; ,sQ;#lhfTk; ntspwpAk; fhzg;gLfpwJ.				
19.	vdf;F Rygkhf cwf;fKk; es;spuT Xa;Tk; fpilf;fpwJ.				
20.	vdf;F gjw;w%l;Lk; fdTfs; Vw;gLfpwJ.				